

MAJOR TRAFFIC
THOROUGHFARES AND
TRANSIT PLANS

Lower East Side

NEW YORK CITY

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PLANS FOR
MAJOR TRAFFIC THOROUGHFARES
AND TRANSIT

Lower East Side

NEW YORK CITY

Prepared for the
LOWER EAST SIDE PLANNING ASSOCIATION

by
BARTHOLOMEW AND ASSOCIATES

City Plan and Landscape Engineers

ST. LOUIS, MO.

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THE LOWER EAST SIDE. Slowing relation to the Island of Manhattan, Brooklyn Bridge in left foreground, Williamsburg Bridge right-center, and the Lower East Side. The pronounced bend in the East River causes the Lower East Side to be more or less physically and economically independent of the areas of Manhattan as indicated by building development.

INTRODUCTORY STATEMENT

THE LOWER EAST SIDE has been the subject of public interest and discussion for many years and is of interest to every tax-payer and citizen in the City of New York. In the past two decades, this section has lost fifty-three percent of its population, with a corresponding decline in business and property values. The section is marked by almost universal obsolescence of its improvements, both private and public. The population has moved out because the social conditions have become unsuited to the needs of modern living, and are out of harmony with the standards of a progressive American city.

If the prevailing tendencies are not arrested and some effective means applied in restoring the Lower East Side to new life and vitality, the larger businesses of the neighborhood, which count on local trade for their support, will be forced to seek other locations, and mortgage investors will be forced in self-protection, gradually to liquidate their holdings. It is in the hope of finding a way to save the Lower East Side from that ultimate destiny, that a group of savings banks and title companies and the leading civic agencies of this section have conceived and organized the Lower East Side Planning Association.

The situation is one that calls for heroic and sustained efforts. The degree of obsolescence to which the improvements of this section have depreciated, and the stage of economic and social decline which the community generally has reached, make it clear that rehabilitation can be accomplished only by a gradual reconstruction of the entire area. The district calls for a wholesale over-hauling as funds may be available for private building, and for ordinarily essential public improvements. There would seem to be no alternative from this conclusion. It is essential, therefore, that this broad conception shall prevail at the very beginning, and that every step in the solution of the problem of the Lower East Side shall be planned and directed toward that ultimate objective.

The Lower East Side Planning Association has considered the first step in this broad conception

to be an authoritative study of the present conditions, and the preparation of comprehensive street and transit plans of the district, which may serve to guide future developments on scientific lines. Without some such conception and plan as a guiding and controlling influence, there would seem to be no definite assurance of stabilization, either of economic values, or of the population; and no sound basis of commitment of public funds for municipal improvements, or of private funds for new construction in building. The report which follows is offered to the public as a factual study of the Lower East Side, and as an initial effort toward the development of a concrete program of re-construction.

It is highly important in contemplating any such program of re-construction, that private investments may be shown to be a sound business risk, and that the city's investments may be justified by increased public revenues. The public and private investments that have already been made in this area, are too great to warrant additional investments, except on a soundly conceived and thoroughly planned policy and program, looking to the long future.

The restoration of the Lower East Side lies in stabilizing the population. This section has always been and doubtless will continue to be mainly a residential area for a long time in the future. By natural advantages it offers one of the most attractive residential sites in the greater city. But new people cannot be attracted, or the present population sustained, except by the development of modern housing facilities, and greatly improved environmental conditions. Therefore, the major consideration in a re-construction program of this area, is the means by which new housing may be successfully provided. Preliminary studies and planning are essential in laying down the principles of the entire re-construction program. But these studies and plans will have no permanent influence, unless they demonstrate the practicability of large housing developments and stimulate concrete efforts in that direction.

It is the judgment of this association that the ordinary methods of scattered, speculative building here and there over a broad area, is not the proper approach to the reconstruction of the Lower East Side. It calls for a major operation in the very beginning. The initial approach to housing should be through a self-contained unit, large enough to be self-sustaining and to create a neighborhood environment of its own. It is only by some such bold and courageous effort that this section can be pushed off dead centre, and started toward complete economic recovery.

But before rushing precipitantly into large housing projects in an area that has sunk to the present level of the Lower East Side, it should be demonstrated by every fact attainable, that a first housing unit will not only be successful on its own account, but will tend to encourage similar construction; and that private investors, the City Government, land owners, and every other essential influence can be brought together under proper leadership for harmonious and cooperative action. It must be demonstrated, furthermore, that the reconstruction of the Lower East Side will serve as a constructive influence in the general economic structure of the City, and not unduly disorganize any other section.

The construction of an initial housing unit on the Lower East Side is a very large business project, which must be set up on sound economic principles, and with high social purpose. The range of rents, the demand for housing in this area, the standards of design and community planning, the means of assemblage of land, methods of financing, and every other pertinent economic and social factor, should be so clearly analyzed in ad-

vance, as to prove the soundness of the venture and to set the standards for the future.

Clearly, the conception of the rehabilitation of the Lower East Side herein expressed, is a long procedure, and presents many difficulties. It has taken this area a long time to decline to its present stage. Naturally, it will take it a long time to completely recover. During the gradual process of replacing the old, obsolete buildings by new construction, there doubtless will be a substantial amount of remodeling of old buildings. This will be necessary in the immediate years ahead to sustain these properties on a paying basis. A certain amount of remodeling will be desirable also during the period of reconstruction in providing better housing accommodations for those present residents who want to live on the Lower East Side, but whose incomes will not justify the rent that new housing on such high-priced land will command. But these expedients of remodeling or short cuts of any sort must not divert attention from the ultimate aim of rebuilding the section by new construction.

This report is being distributed to a limited group of individuals and institutions that have shown particular interest in the Lower East Side, and in the work that the Lower East Side Planning Association is doing. It is hoped that the facts and conceptions which this report sets forth, with respect to the solution of Lower East Side's problem, may serve to advance the public interest, and help to unify that interest into a program of positive action.

LOWER EAST SIDE PLANNING ASSOCIATION
By Orrin C. Lester, *President*.

THE CITY OF NEW YORK
DEPARTMENT OF CITY PLANNING
253 BROADWAY

JOHN F. SULLIVAN
COMMISSIONER OF CITY PLANNING

To the Officers and Members
Lower East Side Planning Association
New York, N. Y.

In planning the future New York, there is no more pressing problem demanding solution than a scientific rehabilitation of certain areas which, through various causes, have ceased to be attractive as home and industrial centers. The spread of stagnation has been progressive for years.

In the area of the Lower East Side, with its loss in population and miles of obsolescent houses, is the need most urgent for the cooperation of public spirited citizens, corporations and city planning agencies in evolving extensive reconstruction on sound lines.

As the greatest port of the country and the largest financial, manufacturing and industrial center, the genius of our engineers and architects has been more particularly employed in planning immense manufacturing plants and skyscrapers. The wants of commerce have for the time being been supplied, and the opportunity is now offered, greater than at any time within twenty years, for the engineers and architects to look profitably into the shadows of the great city,—the Lower East Side and other blighted sections of the city, where live the masses entitled to decent living at minimum rentals. Even with relatively high land values, modern construction can be undertaken with the assurance of a fair, constant return on investment. Progressive builders are now directing their study to this opportunity for the extensive employment of money, as well as men and women.

The City Government of New York is profoundly interested in the Lower East Side, as manifested by numerous improvements accomplished, including street widening, park and playground acquisition, subway construction and, more recently, the authorization of the East River Drive. All the efforts in this area, however, have not in any large degree arrested the loss in population, decline in property values, or substantially improved the housing standards. Nowhere in the city could a beginning be made under more dramatic conditions, with greater social significance, or under more favorable circumstances, than upon the Lower East Side.

The Department of City Planning has given extensive study to this particular area, and plans for rehabilitation are in progress. It has developed for consideration plans for the construction of one large area, but they cannot be pressed to accomplishment without amending in vital details existing laws upon which to base the question of a definite city policy. In solving this problem of housing, the active interest and cooperation of district citizens' organizations and civic-minded men and women will be needed if real progress is to be made.

The Department of City Planning is deeply interested in the studies and recommendations of this report, which in many particulars are in harmony with the findings in its survey.

Permit me to commend the work of the Lower East Side Planning Association. It is most encouraging and helpful when local organizations take such a constructive interest.

New York, July 19, 1932

John F. Sullivan
Commissioner of City Planning

HARLAND BARTHOLOMEW AND ASSOCIATES
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317 NORTH ELEVENTH STREET

May 6, 1932

The Lower East Side Planning Association
New York, N.Y.

Gentlemen:

In accordance with our agreement of October 14, 1931, we are pleased to submit herewith studies and statistical data constituting a comprehensive analysis of the street system and of transit facilities of the Lower East Side, together with a comprehensive main traffic thoroughfare plan and transit plan based thereon. We trust that these plans will prove to be an appropriate first step in the reconstruction of the Lower East Side.

In accordance with our further agreement to advise and consult with respect to immediate housing problems, we were fortunate in securing the services of Mr. John Taylor Boyd, Jr., who made a preliminary investigation of the possibilities of a large scale, self-contained, housing development, in an area bounded by main traffic thoroughfares, which is found in Part Five of the accompanying report.

Very few subjects are of greater public interest in New York than the rebuilding of the Lower East Side. The present work has been of unusual interest and of great pleasure to us because of the many enjoyable associations and uniformly generous cooperation received. We are indebted to Major John Sullivan, City Planning Commissioner, and his staff for furnishing information and assistance in the preparation of our studies. We have had the advantage of such previous studies of the district as are contained in the Day and Zimmerman Traffic Report, and a special report prepared for the East Side Chamber of Commerce by Holden, McLaughlin and Associates. The publications of the Regional Plan of New York and Its Environs furnished a wealth of material, both with respect to the planning of the Greater City and in certain details with respect to the Lower East Side. Mr. Harold Lewis, of the staff of the Regional Plan, has been particularly helpful in furnishing information and in discussing the work of the Regional Plan and its bearing upon present problems. The East Side Chamber of Commerce possesses much valuable data of various kinds which have been freely drawn upon through the kindness and generous assistance of its most able secretary, Mr. Joseph Platzker.

The Lower East Side
Planning Association

-2-

Mr. George Gove, Secretary of the State Board of Housing, has given much of his time and efforts in furnishing information and assistance with respect to housing policies growing out of the experience and the work of that Board. We are also indebted to various departments of the city government for much statistical material, which has been so kindly furnished by the Department of Taxes and Assessments, the Commissioner of Public Markets, the Department of Docks, and the Borough President's office. The State Transit Commission and the Port Authority have kindly furnished much valuable information. We wish to make appreciative acknowledgment of the cooperation and assistance given by each of these individuals and department of the government.

Through the kindness of Dr. Henry Fleischman and Mr. Irving Wald, the services of the Boy Scouts of the Educational Alliance were enlisted in making traffic counts on all the streets of the Lower East Side. The information shown on Plate Number Eight is the outcome of this work, which is a particularly valuable addition to our studies. The excellent manner in which the information collected was found to check at various points throughout the district is a tribute to the integrity and ability of these young men.

It has been our pleasure to make more or less continuous contact with your organization through its president, Mr. Orrin C. Lester. His interest in the work and his willingness to aid and assist at all times have been of incalculable advantage. His familiarity with the district and with the many individuals concerned with one phase or another of the development of the East Side has greatly facilitated our work.

Respectfully submitted,

BARTHOLOMEW & ASSOCIATES

By:

Harland Bartholomew

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OUTSTANDING FINDINGS AND RECOMMENDATIONS

THE LOWER EAST SIDE is the most favorably located of all of the areas on Manhattan Island for an extensive moderate priced multiple-family dwelling area.

Population has been decreasing rapidly and uniformly over the entire area since 1910. This decrease of over 53 per cent has been due to the lack of modern dwelling structures, unlimited spread of the city due to rapid transit and the automobile, cessation of immigration and removal of industries.

Assessed Land Values for 1932 on the Lower East Side are the lowest of any large area south of Dyckman Street on Manhattan Island.

Total assessed land and improvement values for 1909 (\$270,835,040) and 1932 (\$263,779,220) are practically the same. Values in the areas adjacent to the East River have declined, but this decrease has been counterbalanced by a corresponding increase on the main traffic thoroughfares and along the rapid transit lines. The average value for the 1931 assessments for all land and improvement, including the value of exempted property, was \$13.60 per square foot.

Although land uses are at present confused and inextricably mixed, the Lower East Side always has been and still is predominantly residential. Over 63 per cent of the land is used for dwelling purposes. There are 9,779 buildings of which 8,138 are tenements, apartments, lodging houses or dwellings.

The present street system provides many unnecessary and entirely superfluous streets. The traffic could be handled adequately by the provision of fewer main and secondary thoroughfares. There are now 41.6 miles of streets which occupy an area of 318.3 acres. The proposed thoroughfare plan has but 16.1 miles of streets or 200.8 acres. This is 38.6 per cent of the present street mileage or an equivalent of 63 per cent of the present street area.

Restriction of many of the streets to pedestrian use would not only simplify traffic movement but would provide open space for park use in an area where additional space is essential and otherwise

very expensive to secure. There are but 30.5 acres of park or a ratio (based on the 1930 population of 249,755) of 8,188 persons per acre.

Indiscriminate parking and the use of certain streets by pushcart markets interfere with traffic movement. A survey indicated a total of 4,898 vehicles parked on the streets, of which total 2,028 were on Allen, Pike Streets, First Avenue and the streets west thereof. There also were 1,509 pushcarts using the streets' space, during a typical day in January. During the Spring and Summer months as many as 3,500 pushcarts are in use.

An appreciable part of the Lower East Side is wholly or partially tax exempt. The total value of the exempted land and improvements is \$58,403,610. This is 23.0 per cent of the total block area.

The unmortgaged property, excluding city holdings, occupies but 9.9 per cent of the total block area.

A preliminary study of a large unit area demonstrates that a high standard of housing can be provided with exceptionally desirable environmental conditions at rentals of from \$16.00 to \$18.00 per room per month.

MAJOR AND SECONDARY THOROUGHFARES

All of the foreign traffic movements can be adequately and expeditiously handled on First Avenue—Allen Street—Pike Street and the thoroughfares west thereof. The thoroughfares recommended to care for this movement are:

1. First Avenue—Allen Street—Pike Street.
2. Second Avenue—Chrystie Street.
3. Third Avenue—Bowery.
4. East 14th Street from Third Avenue to First Avenue.
5. East Houston Street from Bowery to Allen Street.
6. Schiff Parkway.
7. Canal Street west of Chrystie.
8. Division Street—East Broadway from Chatham Square to Allen Street.
9. South Street west from Pike Street.
10. Forsyth Street from Canal to East Broadway.

The secondary and local traffic movements can be readily accommodated on a system of thoroughfares spaced about one-quarter of a mile apart. Traffic flow through the section east of First Avenue—Allen and Pike Streets should be discouraged. The additional thoroughfares recommended to care for this movement are:

1. East 14th Street from First Avenue to the East River.
2. East 10th Street from Third Avenue to the East River.
3. East 5th Street from the Bowery to the East River.
4. East Houston Street from Allen Street to the East River.
5. Delancey Street from Clinton Street to the East River.
6. Grand Street from the Bowery to the East River.
7. Canal Street from Forsyth Street to the East River.
8. East River Drive from East 14th Street to Grand Street.
9. East Broadway from Allen Street to Grand Street.
10. South Street from Pike Street to Grand Street.
11. Avenue "B"—Clinton Street.
12. Avenue "D"—Columbia Street.

TRANSIT

The Lower East Side is convenient to all existing rapid transit lines. A remarkable concentra-

tion of rapid transit facilities, equalled by no other potential multiple-family dwelling area in New York City, will be available when and if the second step in the rapid transit program is accomplished.

Numerous surface street car and bus lines provide service uptown, downtown and across Manhattan to and from the Lower East Side. Street cars on the Williamsburg and Brooklyn Bridges and a bus line on the Manhattan Bridge serve the northern part of Brooklyn. Certain adjustments of routing, conversion of street car to bus will improve the service rendered, increase the area served and also reduce much unnecessary duplication of service.

RECOMMENDED PROCEDURE

Five additional steps are necessary before reconstruction should be initiated. They are:

1. Official adoption of the thoroughfare and transit plans.
2. Determination of the type and rental range in new structures. This can only be definitely answered by a Housing Market Survey.
3. Further investigation and research into the social, economic, and architectural possibilities of neighborhood unit development.
4. Survey of parks and zoning for the purpose of co-ordinating both with whatever plans are finally adopted for the Neighborhood Unit Development.
5. Formation of a housing corporation to assemble land, arrange financing, and build the neighborhood units.

INTRODUCTION

THE LOWER EAST SIDE OF MANHATTAN has been defined, for the purpose of this investigation, as all of the area bounded by East 14th Street—Third Avenue—Bowery—Bayard Street—Market Street and the East River. During the past hundred years it has been predominantly a tenement dwelling area interspersed with retail stores and some industries. It is the purpose of this study to ascertain what major streets and transit facilities are needed if this area is to be reconstructed upon a permanently sound social and economic basis.

Housing conditions in the Lower East Side have long been considered the most extreme example of unsound social standards. The inevitable result of unsound social conditions is now being experienced in the form of rapidly depreciating values of buildings and land. New York City has often been referred to as the greatest practical laboratory for city planning in the United States. Problems of street traffic congestion, of transit, of railroad terminals, of zoning, and of recreation first arose in their most specialized forms in this city. Now, here in the Lower East Side we encounter for the first time and in most acute form a new and difficult problem which is the inevitable result of modern forms of city growth as practiced in American cities. Here appear social and economic instability and obsolescence on such a large scale as to threaten the soundness and stability of the whole municipal structure, for the condition of the Lower East Side is merely an extreme manifestation of similar conditions which will become increasingly evident in the large central areas of this and other cities. In dealing with this problem, New York has an opportunity to furnish initial leadership in this as it has first done in other branches of the modern science and art of city planning.

The conditions to be dealt with have endless ramifications. The problem involves the fundamentals of sociology and of economics. There is no single or simple solution. A plan which is highly desirable from a social standpoint but economically impossible will be just as futile as a plan which is economically attractive but socially un-

sound. A permanently good result can be attained only where high social standards go hand in hand with reasonable economic considerations. Neither of these factors has been sufficiently recognized and appreciated in our previous practices of city building. City planning has been too modestly conceived and enforced to overcome the uneconomic and socially unsound practices of excessive speculation in land and building development. New standards and new conceptions of street design, building design, provision of open spaces and of financing are necessary for permanent reconstruction of the Lower East Side.

In this present study no attempt is made to offer a full and complete plan for the reconstruction of the Lower East Side. Any permanent plan must begin, however, with a recognition of the relation of the area to the city as a whole including provisions for the accommodation of traffic and transit which are essential to the life of the whole community. These, however, should be supplemented by the minimum provisions which are necessary for local access and egress and for convenient local circulation. The present study consequently takes into consideration all of the factors which have a bearing upon the design of major streets and transit facilities, and comprehensive plans for streets and transit based thereon are presented. Even though these plans may later require revision based upon more detailed study of the character of new building development which may replace present structures, the present plans at least offer a basis for further study and are a logical first step.

The rebuilding of the Lower East Side has received much consideration by various organizations and individuals. A few very creditable but isolated new buildings have been constructed, such as the Amalgamated Apartments on East Grand; and there has been extensive renovation of numerous old buildings amounting to more than \$1,000,000 per year for several years. This has had no appreciable effect on immediately adjacent property or upon the district as a whole. Complete renovation of all of the existing buildings would be but a temporary expedient, merely

delaying the inevitable effects of obsolescence. Reconstruction of the present obsolete structures on individual lots or upon small assemblies of individual lots is more or less impossible and, even if undertaken, would only recreate most of the present conditions in a comparatively few years. In areas such as this, a large percentage of the owners of property are without sufficient funds to even renovate existing buildings. Approximately 90 per cent of the property is mortgaged, but due to rapid depreciation and obsolescence, mortgage loans have been reduced until they amount only to about presumed present land values. Because of the general character of the district, little or no new mortgage money is available; and hence those who hold an equity in the properties, as well as those who hold mortgages, find their investments in constant jeopardy.

It is admittedly hazardous to predict the future of any land on Manhattan Island where complete change in large areas can and has taken place in relatively short periods of time; but the Lower East Side appears to face complete economic collapse if present conditions are to be continued. While this is the most involved and difficult of all the problems which American cities have to face, there would seem to be no good reason why we should admit that blighted areas and slums are the inevitable concomitants of the growth of large cities and that our business initiative and our governmental machinery are incapable of dealing successfully with them. The Lower East Side is so situated as to be predominantly suited to multiple-family dwellings, with some business area. Extensive research and study are needed to determine exactly what particular types of multiple-family dwellings should be built and from exactly which income groups the population to be housed can most logically come. No attempt to make such determination is undertaken in this report, although a later section (Part Five) by Mr. John Taylor Boyd, Jr. indicates that the possibilities in this area are such as to encourage large-scale building development of a satisfactory type, which could be provided by private initiative for population in the lower income groups—assuming municipal coöperation and participation no greater than that already practiced in various forms of public work in different parts of the city. Over 50 per cent of the former population has been lost, and the present population is gradually declining in numbers so that there appears to be no basic social or other reason for attempting to accommodate any particular income group of the popula-

tion. The area is so large, however, that it could not be absorbed entirely by high-income groups.

Any satisfactory permanent reconstruction of the Lower East Side can be assured only by complete rebuilding of large unit areas. New building construction must take advantage of the many economies of large-scale production. It must also offer certain types of modern conveniences, but more particularly adequate open spaces and general community development affording sound social standards that are possible only through integration of the various elements which comprise comprehensive city planning practices.

Satisfactory environment is the first prerequisite of good dwelling areas, and the present conditions in the Lower East Side are outstanding examples of the fact that good environment cannot be achieved by uncontrolled building development on small lots, constructed merely in response to short-lived speculative demands.

Causes of Present Conditions

The principal causes of the blighted character of the Lower East Side are

1. Unlimited spread of the city induced by rapid transit facilities and the automobile.
2. Rapid depreciation and obsolescence of existing buildings, due to poor design, inadequate maintenance, no modern conveniences, and inadequate standards of light and air.
3. Cessation of immigration and rapid decentralization of immigrants for whom the Lower East Side served merely as a temporary reservoir.
4. Reputation of the district created by former overcrowding of the land and practices of exploitation.
5. Removal of the garment industries to other parts of the city.

These basic causes have resulted in population decline, increasing vacancy in dwellings and stores, reduced rentals for both dwellings and stores, and removal or reduction in service of certain local transit facilities.

Population during the past twenty years has declined from 531,615 in 1910 to 249,755 in 1930. *This is a decline of 53 per cent.*

In 1931 there were approximately 12,500 stores, of which total about 2,000 were vacant. This is a 16.0 per cent vacancy.

Rents in stores and cold-water flats are declining rapidly. The decline in rent is substantiated by a report of the East Side Chamber of Commerce which was prepared after a conference with various property owners and which may be found in

the East Side Chamber News of January, 1931. The present rents vary from \$2.50 to and above \$15.00 per room per month, with the general average about \$6.00. Even this cannot be expected to be maintained unless some aggressive policy of reconstruction is adopted. New and renovated buildings are perhaps arresting and postponing a more precipitous decline but are generally not sufficient in number to maintain values over any sizeable area.

The Lower East Side is not the only area faced with conditions of the character above described. Other sections of Manhattan Island, areas in Brooklyn, Queens, and the Bronx are facing similar conditions. Other large cities, such as Philadelphia, Chicago, and St. Louis, possess large areas similarly afflicted. Smaller cities will sooner or later be confronted with this same problem varying in proportion to the degree of speculative practices and unsound methods of city growth.

This investigation includes only recommendations for a complete system of major and secondary thoroughfares and a system of local transit facilities, supplemented by a preliminary investigation of housing types for large-scale operations. Numerous interrelated factors have been briefly examined to ascertain what effect existing conditions and trends would have on the thoroughfare and transit systems.

The procedure recommended for the gradual realization and ultimate consummation of the major and secondary thoroughfares and transit plan is fully discussed in Part Six of this report. The thoroughfare and transit plans here recommended are but the first step, since it appears logical and essential to plan for the principal traffic and transit requirements prior to any exhaustive investigation of the other necessary facilities, such as schools, parks, zoning, and detailed housing plans.

PART ONE
EXISTING CONDITIONS

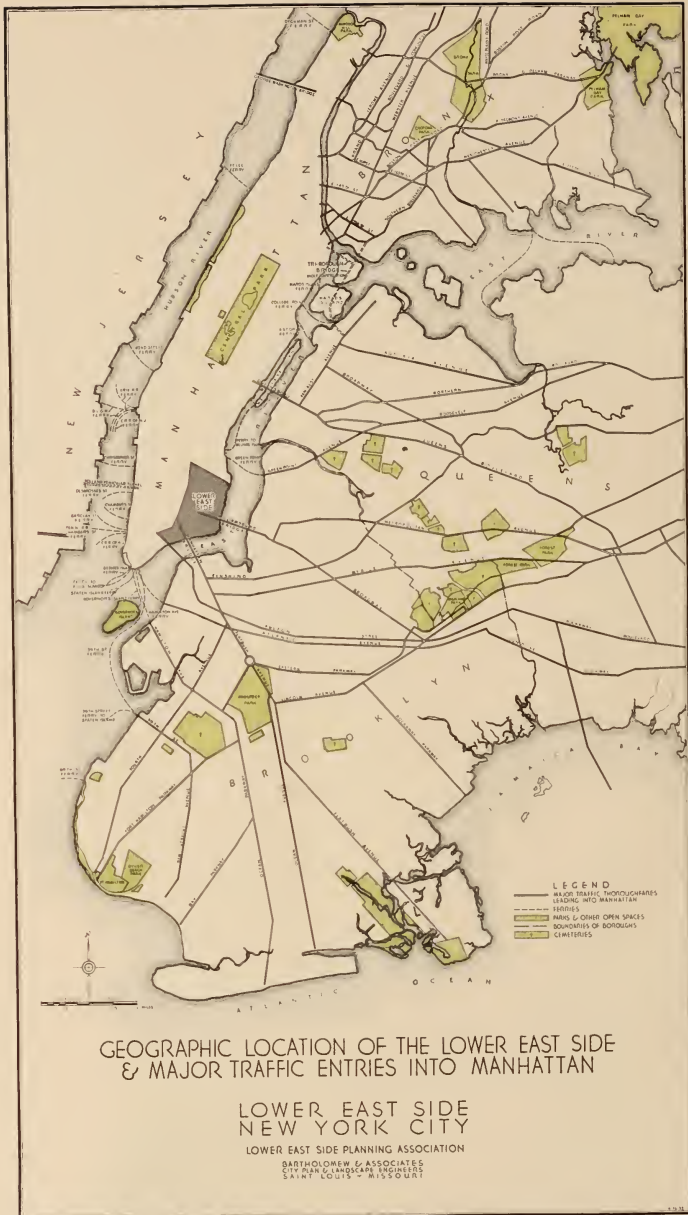


PLATE NUMBER ONE

GEOGRAPHIC LOCATION OF THE LOWER EAST SIDE AND MAJOR TRAFFIC ENTRIES INTO MANHATTAN

Plate Number One

THE GEOGRAPHIC LOCATION of the Lower East Side with respect to Manhattan Island and other portions of New York City is shown on the opposite plate (Plate No. 1). The territory included on Plate No. 1 includes all of the Boroughs of Manhattan and Brooklyn and certain portions of Queens and the Bronx. Within these areas all of the large parks, cemeteries, government reservations, and other open spaces have been separately indicated.

The Lower East Side (897.7 acres) occupies 6.3 per cent of the total area of the Borough of Manhattan (14,209 acres) or 0.45 per cent of the total city area (197,727 acres).

The street plan of Manhattan is laid out in a rectangular pattern with the north and south avenues generally twice as wide as the east and west streets, with the distance between avenues much greater than between streets. Certain exceptions to the prevailing pattern of streets are found in a limited area in the north part of the Island and in Lower Manhattan i.e., the portion south of West 14th Street—Greenwich Avenue—West 8th Street—Bowery and Houston Street.

Because of the concentration of commercial and certain industrial activity, Manhattan Island has become the predominant focal point for all vehicular and transportation movement within the metropolitan district. The nature of the street plan, the concentration of commerce and industry plus the physical limitations of the site have induced traffic congestion which is common to the whole island and particularly noticeable at certain points. The limited number of East River crossings (four) to points in Queens and Brooklyn, the two direct connections to New Jersey, the several bridges to the Bronx all contribute in creating points of maximum traffic congestion on Manhattan Island.

The accompanying plan (Plate No. 1) shows the major arterial thoroughfares leading from Brook-

lyn, Queens, and the Bronx into Manhattan. The two New Jersey entries (the Holland Vehicular Tunnel and the George Washington Bridge) as well as the various ferry lines have also been indicated. Since practically all of the north-south avenues and many of the cross-town streets serve as dominant traffic thoroughfares in Manhattan, they have not been indicated. All of the bridges, including the Tri-Borough Bridge now under construction, are also shown.

The four bridges from Brooklyn and Queens are not advantageously spaced, for three (Brooklyn, Manhattan, and Williamsburg) are concentrated on the lower part of Manhattan with a gap of approximately three miles between the most northerly of the three (Williamsburg) and the crossing at the Queensborough Bridge.

The Manhattan terminals of the three lower East River bridges introduce traffic in a closely spaced area on Manhattan Island where the street plan is irregular and street and avenue widths are narrow compared with the section north of 14th Street.

Practically all sections of the Bronx, Queens, and Brooklyn are afforded reasonably direct access to Manhattan. The major part of the Brooklyn traffic uses the three lower East River bridges. The Queens traffic in the main uses the Queensborough Bridge, but a very limited amount of this traffic is cared for by the three lower bridges. The traffic entering Manhattan Island from the Bronx is distributed between the various bridges across the Harlem River.

1931 VEHICULAR TRAFFIC OVER EAST RIVER BRIDGES

Most of the major streets forming the well defined system leading to the three lower bridges are distributed over a wide area, extending from the upper Bay and Narrows on the west to Rockaway Parkway on the east and southward to the Atlantic

Ocean, Fourth Avenue, Fort Hamilton Parkway, Bay Parkway, Ocean Parkway, Ocean Avenue, Flatbush Avenue, Fulton Street, and Atlantic Avenue all have liberal roadway widths and large traffic capacities.

While there is an indication of a slight increase in vehicular traffic across the Brooklyn and Manhattan Bridges, the Williamsburg Bridge traffic decreased in 1931. Twenty-four hour comparative vehicular counts by the Department of Plant and Structures for these bridges taken in October 1928, 1929, 1930 and 1931 are shown by the following table:

Table No. 1

VEHICULAR TRAFFIC FLOW ON
THREE LOWER EAST RIVER
BRIDGES

Date	Williamsburg Bridge	Manhattan Bridge	Brooklyn Bridge
1928	41,200	59,500	22,200
1929	47,992	69,301	29,992
1930	48,565	65,828	22,540
1931	38,381	69,670	21,888

These three bridges constitute the principal direct foreign traffic entries into the Lower East Side. They also accommodate a large part of all vehicular traffic entering Manhattan Island.

Considering the Lower East Side reconstruction predominantly for dwelling use, any rearrangement of entries or readjustment of main highways tending to divert vehicular movement to other of the Manhattan entries is generally desirable. Diversion has been forecast as a result of the construction of the Tri-Borough Bridge, and it would also unquestionably be encouraged by the construction of the proposed 38th Street and Hamilton Avenue-Battery vehicular tunnels.

It is improbable, however, that the Lower East River bridge traffic could ever be reduced much below the present volume. Even though new entries to Manhattan elsewhere would tend to reduce the volume here, the probable increased vehicular registration and consequent use of the limited number of crossings will more than offset any reduction.

Since, therefore, a heavy volume of mixed passenger and commercial traffic, originating in and destined for the areas shown by Plate No. 1 to be tributary and accessible to the bridges, is inevitable, it will have to be provided for in the

arrangement of the street system of the Lower East Side. Since a certain volume of foreign through traffic cannot be avoided and will continue to grow, even if additional entries are provided, plans for reconstructing the district must recognize and make provisions for this movement.

Since the traffic on the Manhattan is considerably in excess of that on the Williamsburg Bridge and the latter bridge is more favorably located to make possible a more satisfactory dispersal of movement in Manhattan, any street improvements on the Brooklyn side of East River tending to facilitate traffic movement to and from the bridge and the tributary districts should be encouraged.

It is suggested that the Williamsburg Bridge Plaza in Manhattan be rearranged and the present street car lanes on the bridge be changed to vehicular lanes. Even with the Tri-Borough Bridge and the 38th Street vehicular tunnel completed, it is likely that further intensive development in the area tributary to the Williamsburg Bridge will result in increasing the volume of traffic, and the present roadways will require some relief. The northerly street car lane has recently been abandoned for cars and is to be reconstructed for vehicular use. The southerly street car lane should be similarly treated.

The Manhattan Bridge and its connection with the Holland Tunnel through widened Canal Street is the logical route for Brooklyn-New Jersey traffic. This bridge also accommodates traffic between the area directly eastward from the Williamsburg Bridge, including parts of Brooklyn and Queens and lower Manhattan as well as traffic between Brooklyn north and east of Flatbush Avenue and mid-Manhattan.

Ultimately the Tri-Borough Bridge will undoubtedly divert some traffic between Brooklyn and upper Manhattan from the present Lower East River bridges. It is evident, however, that this will require the development of a main route east of the river paralleling the avenues in Manhattan before any large amount of traffic will so move.

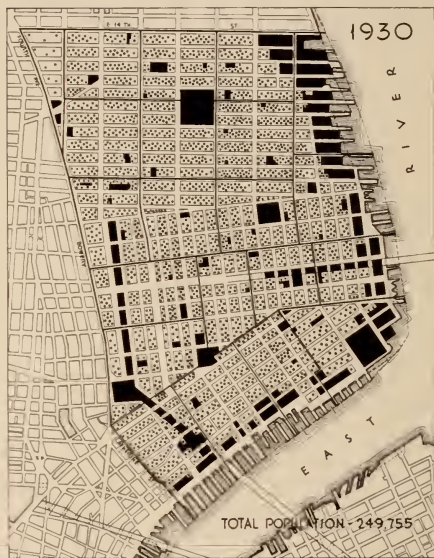
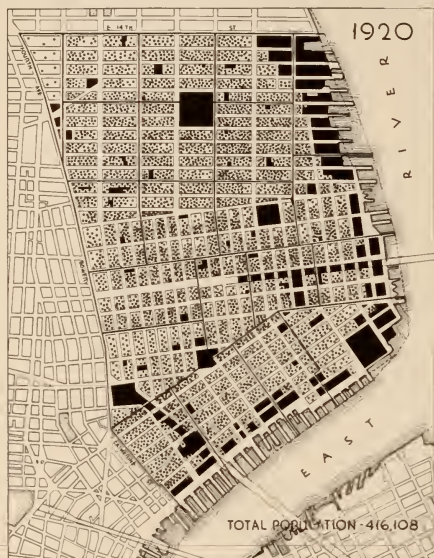
The relation of the Lower East Side to present traffic movements within Manhattan itself is shown and discussed in detail under Plate No. 8.

It has been proposed to replace the present ferry facilities between the Battery and Hamilton Avenue, Brooklyn, by constructing a vehicular tunnel connecting with West Street. (Day and Zimmerman Report to Mayor Walker, 1929.) This

project would, no doubt, further divert traffic from the existing bridges, most of which would be commercial. This is the least desirable of any traffic to have moving through the Lower East Side, and its movement through other channels than over the three lower bridges would be of advantage to the area.

In conclusion it is found that the geographic location of the Lower East Side is most favorable

for its development as a close-in dwelling area. It is located on a prominence which juts out into the East River and is east of and away from the major commercial and business districts extending along the axis of Manhattan Island. Although not directly in the path of this commercial and business development, still it is convenient to all centers either by walking or surface transit facilities, obviating the use of the subways.



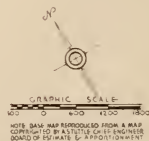
DISTRIBUTION OF POPULATION 1920-1930

LOWER EAST SIDE NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

- LEGEND
- EACH DOT REPRESENTS 100 PERSONS
 - SANITARY DISTRICT BOUNDARIES
 - NON-RESIDENTIAL PROPERTY



DISTRIBUTION OF POPULATION

1920—1930

Plate Number Two

Statistics of the United States Census Bureau afford the most accurate data concerning population movements that have taken place within the district. The accompanying illustration (Plate No. 2) was prepared to show the very significant change that has taken place during the past decade. The statistics for these two census years (1920 and 1930) were plotted on maps on which all non-residential property, such as schools, parks, playgrounds, industrial areas, and the like, had been outlined. The population by sanitary districts for 1930 and by wards for 1920 was then apportioned to each block. This apportionment was determined by a count of the total number of residence buildings in the sanitary district, or ward, and dividing the total district or ward population into the smaller block units in the same proportion as the total number of dwellings within the sanitary district, or ward, is to the number contained within any particular block.

The area within which the population is shown comprises all of Wards No. 7, 10, 11, 13 and 17 of the Borough of Manhattan.

The population for these wards by decades since 1890 is shown in the following table:

Table No. 2

POPULATION OF LOWER EAST SIDE
BY WARDS*
1890 to 1930

Ward No.	1890	1900	1910	1920	1930
7	57,366	64,117	102,104	78,081	45,709
10	57,596	71,897	66,438	45,872	24,397
11	75,426	99,144	126,097	104,544	65,933
13	45,884	64,117	64,644	46,812	26,902
17	103,158	130,796	172,332	140,799	86,814
Totals	339,430	430,071	531,615	416,108	249,755

* Data from U. S. Census reports.

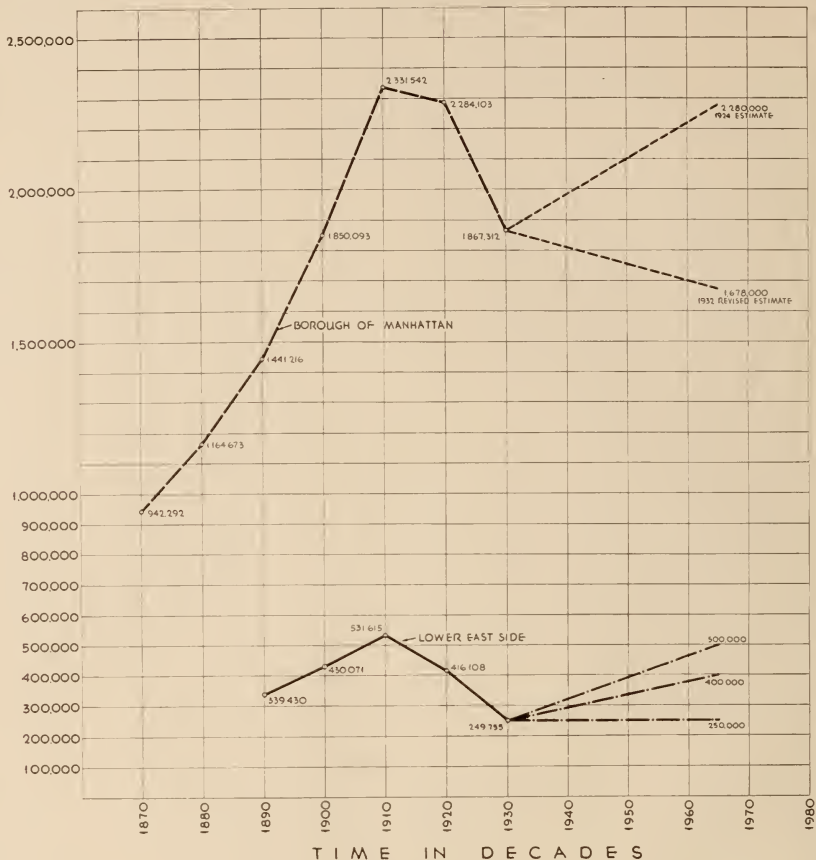
The population trend during the past forty years was considered as sufficient to depict the tendencies of the Lower East Side. From 1890 to 1910 population increased from 339,430 to 531,615, an increase of 56.7 per cent above the lower figure. Since the peak of 1910, it has rapidly declined until in 1930 there were in the area, according to the United States Census report, but 249,755, or a decline of 53.0 per cent from the 1910 high. It is most significant that the greatest loss in population has occurred in the last decade.

It is a remarkable fact that the population decrease has been fairly uniform throughout the entire Lower East Side. There is no special locality of the area within which the decline is more pronounced.

Since the movement out of the district is principally due to unsatisfactory living conditions, this uniformity of decline over the whole area shows the need for complete reconstruction.

Practically all of Manhattan Island, certain parts of Brooklyn and New Jersey have had decreases in population, though less in proportion than the Lower East Side. The predominant reason is not that the Lower East Side is declining as a desirable dwelling area but is almost entirely due to the fact that the present housing facilities are not conducive to permanent residence. Rebuilding of the area is necessary to arrest a further population decline, but such reconstruction can not be haphazard or by small unit developments. With an adjustment of street facilities; creation of more convenient open spaces; rebuilding with more attractive, modern, and healthful living quarters; and improved local transit facilities, the Lower East Side should be capable of a most economical, efficient, and permanent reconstruction since it is more favorably situated for multiple-family dwelling use than any other part of the city.

P O P U L A T I O N



NOTE: THE THREE POPULATION ESTIMATES FOR THE LOWER EAST SIDE ARE CONTINGENT UPON A COMPLETE REBUILDING OF THE AREA BOUNDED BY 14TH ST - 3RD AVE - BOWERY - CATHERINE ST & EAST RIVER WITH 6 STORY - 12 STORY & FINALLY 18 STORY BUILDINGS PRESERVING A REASONABLE STANDARD OF OPEN SPACE FOR EACH TYPE - THE REBUILDING IS ASSUMED TO TAKE PLACE OVER A LONG PERIOD OF YEARS

POPULATION TRENDS MANHATTAN & THE LOWER EAST SIDE NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

4-18-72

PLATE NUMBER THREE

POPULATION TRENDS

Plate Number Three

The population distribution during past decades and as found at the present time has been fully discussed. It is now essential from the standpoint of analyzing future traffic and transit requirements to make an estimate of the possible future population.

The usual methods of estimating future population based upon evidence of past growth or decline, or comparison with other cities or areas, do not apply if it is to be assumed that the entire Lower East Side is to be completely reconstructed. Past populations or densities are not necessarily a criterion of desirable conditions when such a long-time reconstruction program is to be considered and where unusually favorable dwelling environment must be created to offset unfavorable existing conditions.

The accompanying illustration (Plate No. 3) presents a graphical analysis of the growth and decline of population of the Lower East Side during successive periods from 1890 to 1930, and for the Borough of Manhattan from 1870 to 1930. The successive populations by decades are from the U. S. Census figures. The statistics for New York City, the Borough of Manhattan and the Lower East Side are shown on the accompanying table:

Table No. 3

POPULATION TRENDS, NEW YORK CITY,
BOROUGH OF MANHATTAN, LOWER
EAST SIDE

Year	New York City	Manhattan	Lower East Side
1890	2,507,414	1,441,216	339,430
1900	3,437,202	1,850,093	430,071
1910	4,766,883	2,331,542	531,615
1920	5,620,048	2,284,103	416,108
1930	6,930,446	1,867,312	249,755

New York City increased in population from 2,507,414 in 1890 to 6,930,446 in 1930. This is an increase of 176 per cent.

The Borough of Manhattan increased from 1,441,216 in 1890 to 2,331,542 in 1910. Since 1910 the population has decreased to 1,867,312 persons

in 1930. This is an increase of 61.8 per cent between 1890 and 1910, with a decrease of 19.9 per cent during the past twenty years.

The Lower East Side increased from 339,430 in 1890 to 531,615 in 1910 and then decreased to 249,755 persons in 1930. The increase from 1890 to 1910 was 56.6 per cent. The 1930 population represents a decrease of almost 53 per cent from the 1910 high.

With the present conditions of obsolescent buildings, inadequate open space for light and air, insufficient recreational areas and numerous other unfavorable factors which are largely responsible for the great losses in population, it appears necessary to rebuild the entire area or major portions thereof, if the present unfortunate social and economic conditions are to be corrected. Rebuilding cannot be economically anticipated by small developments on individual lots or even small groups of lots, but rather it must be conceived on a large scale comprising several blocks. A further detailed discussion of the economies of such type of rebuilding is presented in Part Five of this report.

The estimates for future possible population are based on this analysis of unit development by actually preparing block plans and floor layout plans for typical 6, 12 and 18-story structures, designed to provide a desirable amount of light and air for all rooms, maintaining generous open spaces for community, recreational and other activities and adjusting all facilities for the most satisfactory arrangement possible under existing conditions. The results obtained for this unit of 59.3 acres were then applied proportionally over the entire district (897.7 acres). This method, although entirely arbitrary, provides at least two limits within which it is probable that the future population will fall. The lower limit obtained by the use of the typical 6-story non-fireproof building is 250,000 persons, which is the total population today. If the entire area were rebuilt with 12-story fireproof buildings, the future population would approximate 400,000 persons. The upper limit obtained by an assumption of complete rebuilding with 18-story fireproof structures would

accommodate about 500,000 persons. The actual population attracted by the rebuilding, however, will probably fall somewhere between the two extremes, since it is reasonably certain that the building height will not be completely uniform but will be between the indicated limits of 6 and 18 stories.

The estimates for the Borough of Manhattan of 2,280,000 persons and 1,678,000 persons in 1965 shown on the chart were prepared by the Regional Plan of New York and Its Environs in 1924 and 1932 respectively. The 1924 estimate assumed that the decreasing Borough population would be arrested and the future population increased, while the 1932 prognostication assumes a continued decline; this revised estimate having been made as a result of the findings of the U. S. Census of 1930. A movement for the return of population to Manhattan Island seems reasonable, as there is a defi-

nite limitation upon the amount of suburban population that can be brought into the central district by any rapid transit system, no matter how comprehensively conceived it may be. There is a growing realization that excessive decentralization is as economically unsound as excessive congestion. Tudor City is an example of certain of the possibilities of close-in residence. Close-in dwelling areas contiguous to the center of commercial, trade, and industrial activity are entirely logical and desirable from the standpoint of comprehensive city planning. Convenient short riding on local transit facilities with reduction of time required for travel between dwellings and place of business, increased time for recreation combined with sanitary and healthful living quarters, would to a great extent insure the rebuilding of much of the "Slum Area" on Manhattan Island.








DENSITY OF POPULATION 1920 - 1930

LOWER EAST SIDE NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

- LEGEND
-  LESS THAN 250 PERSONS PER ACRE
 -  250 TO 499 PERSONS PER ACRE
 -  500 TO 749 PERSONS PER ACRE
 -  MORE THAN 750 PERSONS PER ACRE
 -  NON-RESIDENTIAL AREA



DENSITY OF POPULATION

Plate Number Four

Congestion has long been synonymous with the term "Lower East Side." It is not a new problem but one that has been common to the district for the past eighty years. The lower end of Manhattan Island was built-up as far north as Grand Street in 1808; to Houston Street in 1817; and to East 14th Street in about 1850. Even though the areas south of East 14th Street and east of Second Avenue was not completely built until after 1850, still there are evidences that congestion had begun on the lower part of Manhattan as early as 1835. The land north of East 14th Street up to the northern extremity of the Island had been plotted in 1811, and ample sites for new buildings were available. Speculation in land materially retarded growth and accelerated concentration in the then built-up section.

The Regional Plan of New York in a volume on "Population, Land Values and Government"* presents a statistical analysis of the rapidly increasing block densities from 1820 to 1910, as shown in the following table:

Table No. 4

BLOCK DENSITIES FOR LOWER EAST SIDE, NEW YORK CITY

1820	54.5 persons per acre
1840	170.9 persons per acre
1870	450.2 persons per acre
1910	867.2 persons per acre
1925	535.7 persons per acre

These statistics are for the total density including that certain portion of the blocks used for non-residential purposes. If this area had been deducted, the actual net densities by blocks would be further increased.

An analysis of the conditions found in 1920 and 1930 is shown on Plate No. 4. Densities for 1920 and 1930 were divided into four density classifications, as follows:

1. 0-249 persons per acre.
2. 250-499 persons per acre.
3. 500-749 persons per acre.
4. 750 and over persons per acre.

The present figures were based on the actual net block area used for dwelling purposes, so that

with the removal of the major portion of the non-residential area, the actual dwelling area densities are closely approximated.

In 1920, with a total district population of 416,108 persons, the major portion of the area was populated at a density greater than 750 persons per acre. The exceptions to this high density were few, with the greater portion of the less intensely populated area located in the blocks between East 11th and East 14th Streets between First and Third Avenues; in the blocks between Grand—Ludlow—East Broadway and the Bowery; and in the blocks between Henry—Corlears—Scammel and the East River.

With the decrease in total population to 249,755 in 1930, there was a corresponding decrease in densities. The population distribution, and density of the entire district declined uniformly. Only the few blocks between East 7th—East 3rd Streets and between Avenue B and Avenue C exceeded 750 persons per acre in 1930. These blocks also lost population and just exceed the 750 density. Most areas dropped to the next lower classification, with the exception of the area bounded by East Broadway—Monroe—Pike—Montgomery which dropped two classifications: i.e., from more than 750 to less than 500 persons per acre.

Areas such as the Lower East Side, within which buildings are rapidly becoming unusable due to obsolescence, narrow streets, and complete lack of open spaces, can only look forward to a continued depression of real property value and a further reduction of total population. The rejuvenation and establishment of a permanent use for the district is contingent upon the creation of additional recreational opportunities, new and modern housing facilities, and an adjusted street structure. Since the Lower East Side has popularly been associated with the worst forms of population congestion and concentration, some radical readjustment and the creation of unusual features of openness are essential to overcome the psychological effect of this past reputation. Population density, like building height, may or may not be injurious *per se*. Of equal importance is the matter of building design and the amount of open space provided and the manner in which these factors are integrated in large-scale planning.

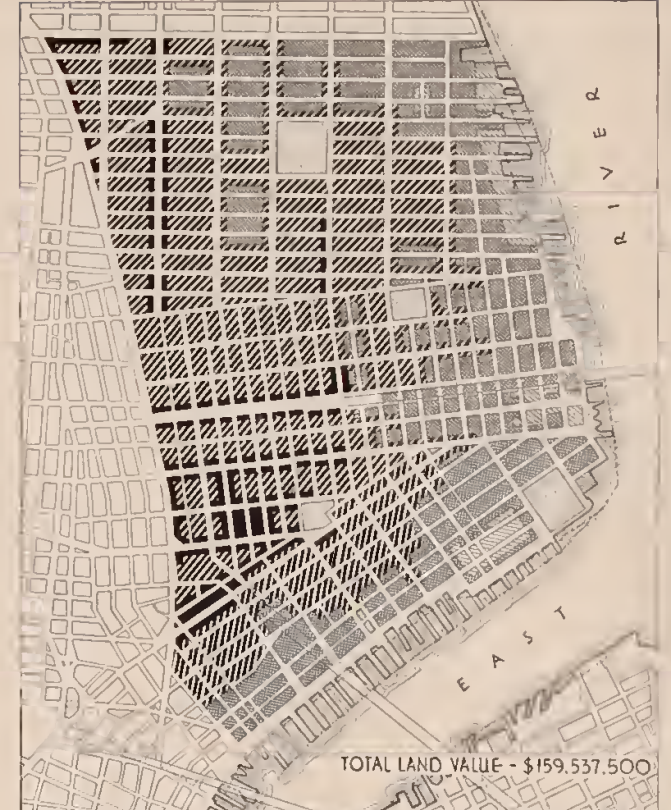
*Survey Volume II, Page 56.



1909



1914



1923



1929



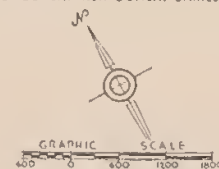
1932

SHIFTING OF LAND VALUES 1909-1932 LOWER EAST SIDE NEW YORK CITY

LEGEND
VALUES IN DOLLARS PER FRONT
FOOT FOR LOTS 100 FT DEEP

- \$ 101 TO \$ 200
- \$ 201 TO \$ 500
- \$ 501 TO \$ 1000
- \$ 1001 TO \$ 5000
- PARKS

NOTE DATA FROM 'TENTATIVE LAND VALUE MAPS'
PREPARED BY THE DEPARTMENT OF TAXES & ASSESSMENTS
TOTAL LAND VALUES ARE FOR AREA BETWEEN E 14TH ST-
FOURTH AVE - BOWERY-NEW BOWERY-JAMES ST-EAST RIVER



NOTE: BASE MAP REPRODUCED FROM A MAP
COPYRIGHT BY AS TITLES CHIEF ENGINEER
BOARD OF ESTIMATES & APPORTIONMENT

LOWER EAST SIDE PLANNING ASSOCIATION
BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

SHIFTING OF LAND VALUES

Plate Number Five

The shifting of land values on the Lower East Side is illustrated on Plate No. 5 by a series of maps of the district on which are shown by different indications the value per front foot of lots one hundred feet deep on the various streets for the years 1909, 1914, 1923, 1929 and 1932.

Each year prior to the establishment of the final assessed values for land and buildings the Department of Taxes and Assessments publishes a volume of maps of the city which shows the tentative unit assessments on real estate established by the deputy tax commissioners. These volumes are titled "Tentative Land Value Maps." They contain figures placed in the streets opposite the various blocks which are the values per front foot for lots one hundred feet deep. The maps are tentative just as are the records of assessment which are subject to correction by the commissioners either upon their own motion or upon application by interested persons. The maps therefore are not sufficiently accurate to be used as a basis for values as expressed in terms of actual tax payments, but they do closely reflect the assessment values from year to year.

Four land value classifications are used on the maps showing frontages assessed at \$101 to \$200, \$201 to \$500, \$501 to \$1,000 and \$1,001 to \$5,000.

In 1909 by far the major part of the district was assessed at from \$501 to \$1,000 per front foot, only a fringe along the river front fell within the next lower classification, while frontage along Schiff Parkway between the Bowery and the Williamsburg Bridge, along Grand Street from the Bowery to Clinton Street, and along the

Bowery between Canal and Grand and eastward on the north side of Canal from the Bowery to Orchard were the locations where the value exceeded \$1,000 per front foot for lots 100 feet deep.

The values for 1914 did not differ greatly from those of 1909. Slightly more land in the blocks adjoining the river front was included in the \$201 to \$500 classification and a small section in the northeast corner of the district dropped to the next lower classification. Higher values began to appear along the Bowery and East 14th Street in the northwest corner of the district with some spread along the north-south streets between Schiff Parkway and Canal Street and along the westerly end of East Broadway.

The recession of values away from the river front by 1923 is quite marked. Much of that part of the district changed from the \$201 to \$500 classification to the lowest classification. At the same time the higher value area increased. This may be seen along Second Avenue, Avenue "B", Canal and Grand between the Bowery and Seward Park, and along Division Street.

By 1929 the area of the \$501 to \$1,000 classification was again reduced in size, the next lower classification was much greater in extent and the high value classification increased in size so that all of Second Avenue, also Avenue "B" and Clinton Street between the Williamsburg Bridge and Tompkins Square, Essex Street two blocks north and one block south from Schiff Parkway, and part of Avenue "A" were included.

The 1932 tentative valuations show a further progression of the above trends with additional

lowering of values in the areas adjacent to the East River and increasing values along the central and westward streets. The present land values are as low as any other large area on Manhattan Island available for dwelling use.

It seems evident from this study that the land value of the Lower East Side as represented by tax assessment is steadily moving toward a higher level along the principal thoroughfares and rapid transit lines and a generally lower level throughout the remainder of the area. Lower values in dwelling property are an apparent logical trend because of the loss in population. Higher values in business property reflect the trend of all such property on Manhattan Island, which may or may not be logical in this particular locality. This subject is worthy of future investigation.

The total land and the total land and improvement values for the entire area included in this factual survey for the various years are as follows:

Table No. 5

TOTAL TAX ASSESSMENT VALUES*
LOWER EAST SIDE, NEW YORK CITY

Year	Tax Rate	Land Value	Land and Improvement Value
1909	1.67804	\$168,815,540	\$270,835,040
1914	1.78	170,167,810	264,102,060
1923	2.74	142,482,290	256,888,040
1929	2.68	157,310,590	284,209,340
1932	2.68	153,573,320	263,779,220

* Area bounded by East 14th Street—Third Avenue—Bowery—Bayard and Market Streets and East River.

To what extent assessed valuations represent trends in true values of land and buildings, or income derived therefrom, it is impossible to say. Certainly it is a significant fact that assessed valuations have declined less than three per cent since the peak of population, while population has fallen off 53 per cent. This means that, aside from increases in tax rate, 249,000 people are now paying at least as much taxes as 531,000 once paid.

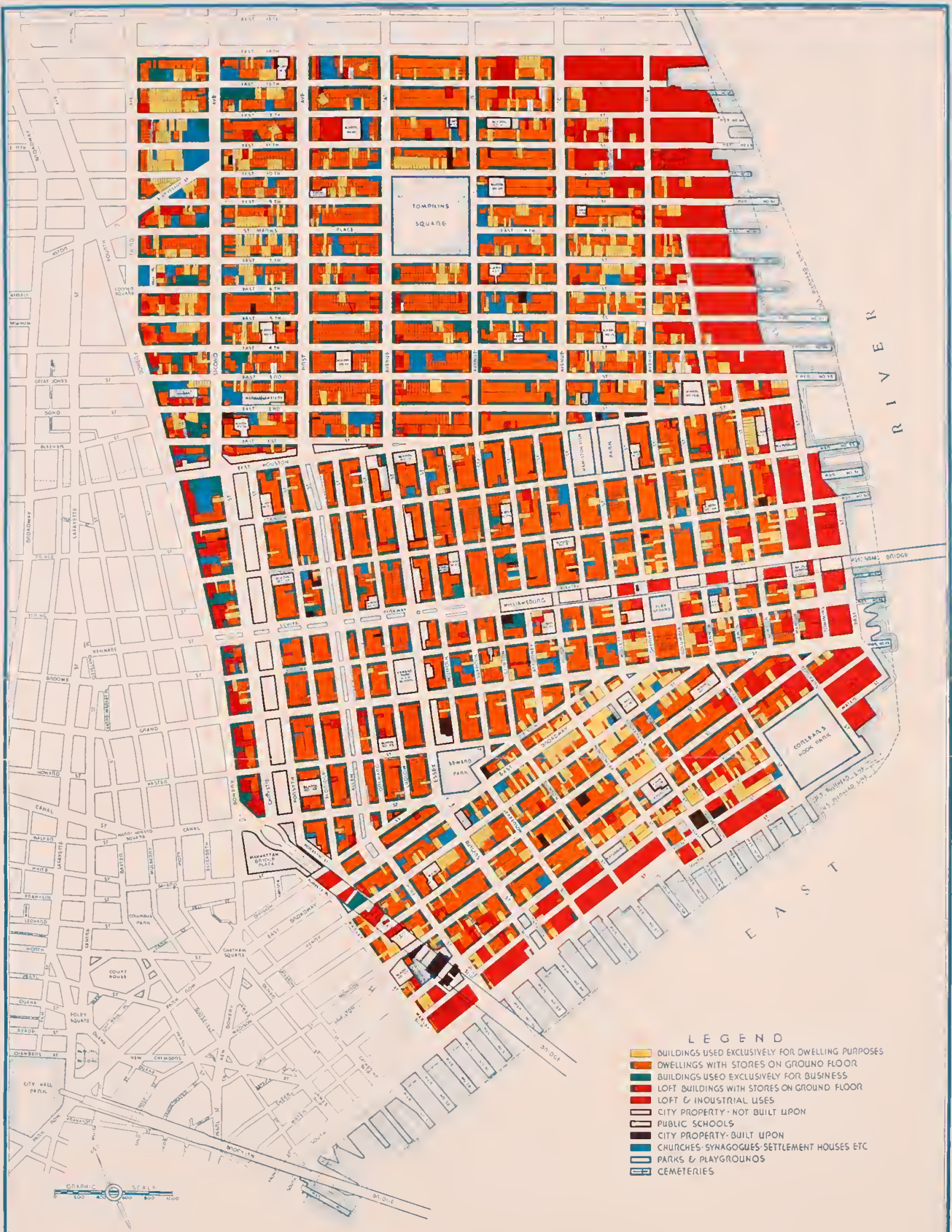


DIAGRAM SHOWING
PRESENT LAND USE
AS OF JANUARY 1, 1932

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

DIAGRAM SHOWING PRESENT LAND USES

Plate Number Six

The Lower East Side has always been and still is predominantly a dwelling area of relatively low buildings. A survey of the number and type of structures contained within the area was completed in April, 1931, by Mr. Joseph Platzker, Secretary of the East Side Chamber of Commerce. This survey, which covers practically the same area as that indicated on the accompanying illustration (Plate No. 6), shows that of the total of 9,779 buildings there are 8,079 tenements and dwellings, 25 elevator apartments, 34 lodging houses, 755 warehouses and loft buildings, 8 office buildings, 130 factories, 275 stables, 44 theatres, 429 miscellaneous buildings, such as schools, churches, synagogues, and the like. The average height of all the buildings is relatively low, 4.54 stories. This is divided between the limits of one and 15 stories; the greatest number (3,781) buildings are found to be five stories high. The number and per cent contained within each height classification are shown on the following table:

Table No. 6

NUMBER OF BUILDINGS OF DIFFERENT HEIGHTS*		
LOWER EAST SIDE, NEW YORK CITY		
No. of Stories	No. of Buildings	Per Cent of Total
1	253	2.6
2	393	4.0
3	1,375	14.1
4	1,859	19.0
5	3,781	38.7
6	1,021	10.7
7	160	1.6
8	12	0.1
9	8	0.1
10	9	0.1
11	2	—
12	3	—
14	1	—
15	2	—
Total	9,779	100.0

Average height in stories—4.54 stories.

*From survey of April, 1931, by Mr. Joseph Platzker, Secretary East Side Chamber of Commerce.

The number of buildings found in 1931, however, is considerably below the maximum number estimated at 12,000 which were concentrated in this area in 1896. The Williamsburg and Manhattan bridge construction and the widening of Delancey Street removed hundreds of these structures in 1903 and 1909 respectively. The recent widenings of Essex, Houston, Chrystie, Forsyth, and Allen Streets have removed more than 700 structures.

It is interesting to note that the most frenzied activity in the building-up of the 20 and 25-foot lots with the "Dumb-bell Tenement" of four, five, and six stories was concentrated between 1888-1896, at the time when immigration was fairly heavy and building restrictions were at a minimum.

The present ratio of persons per dwelling, including all tenements and dwellings, elevator apartments, and lodging houses (a total of 8,138 structures) based on the 1930 population of 249,775, indicates a ratio of approximately 30.7 persons per dwelling.

At present there are fewer buildings than were formerly in the district, while the number of persons is considerably below the maximum (531,615) found in 1910. Congestion within the district has decreased, but such reduction is not a criterion of the waning importance of the area as a dwelling district. This can be ascribed more particularly to a failure to provide suitable and modern living quarters.

Congestion of buildings (in many instances block coverage runs as high as 90 per cent), totally insufficient and inadequate open spaces (parks and playgrounds), and higher standards of living for each succeeding generation have caused a certain proportion of the inhabitants to move out of the district as their circumstances permitted. Formerly this movement out of the district was to a large extent counterbalanced by an influx of foreign immigration. With present restriction of immigration, there is no new incoming population from which this district can draw.

Land uses on the Lower East Side can be divided into eight major classifications as follows:

1. Buildings used exclusively for dwelling purposes.

2. Dwellings with stores on the ground floor.
3. Buildings used exclusively for business.
4. Loft and Industrial buildings.
5. City Property.
6. Semi-public land uses, such as churches, synagogues, settlement houses, and the like.
7. Parks and Playgrounds.
8. Vacant Property.

Plate No. 6 shows graphically the amount of the area devoted to each use. This plate was prepared from data contained in insurance atlases, from certain public records, and from a field check. This survey is a necessary prerequisite to any detailed investigation of housing projects or to revision of the existing zoning plan and ordinance. It is particularly valuable in the consideration of street and transit plans.

This illustration shows conclusively that the major part of the Lower East Side is predominantly used for dwelling purposes. The first two classifications (A—Buildings used exclusively for dwelling purposes, 62.0 acres. B—Dwellings with stores on the ground floor, 305.6 acres) occupy 63.5 per cent of the total block area. There are 367.6 acres in use for these two purposes as compared with a total block area of 579.4 acres.

Buildings used exclusively for dwelling purposes are generally scattered either north of Houston or south of East Broadway, and only a few such structures are found elsewhere. North of Houston Street the greatest concentration of structures used exclusively for dwellings occurs between Second and Third Avenues north of East 6th Street; adjacent to the north side of Tompkins Square; and also between Avenue "D" and Lewis Street from East 3rd Street to East 10th Street. The area south of East Broadway has the majority of the structures used exclusively for dwelling purposes, along East Broadway east of Clinton Street, along Henry Street, and on Water Street.

The second classification, which is all of the buildings which are predominantly dwellings but have one or more stores on the ground floor or in the basement, occupies by far the greatest percentage of the area and is located in all blocks except the outer fringe of industrial property along the East River.

There is no single dominant center of business activity; the majority of the retail stores are found scattered over all of the street frontages. There is no single block frontage, except on Second Avenue between Stuyvesant Place and East 11th Street, that is completely free of stores or industry. It is indeed unusual in a district which

has been and still is predominantly multiple-family dwellings to find such a high percentage of the street frontage devoted to stores and shops, but this is accounted for by the former high density of population. Present density of population is far greater than is generally found in other parts of the city. Of the total block frontage of 374,417 linear feet, there are 167,087 feet occupied by stores and shops. This is 44.6 per cent of the total block frontage or a ratio of 66.5 linear feet per 100 persons, based on the 1930 (249,755) population. There is nearly a solid line of stores on each side of most every block. There are approximately 12,500 stores within the area shown on this plan, of which total about 2,000 are vacant.

A concentration of business establishments into one or more large centers, supplemented by convenient neighborhood unit shopping centers, would unquestionably not only be more convenient but would result in higher value land at strategic locations. This also would aid greatly in creating more attractive dwelling districts.

Industry, warehousing, and similar uses connected with water-borne traffic occupy the outer fringe of the area adjacent to the East River. This illustration (Plate No. 6), however, does not accurately portray the true situation, since many of the areas indicated as now in use for industrial purposes are improved with structures of little value, due to the obsolescence of the buildings. The piers along South Street are now leased by the N. Y., N. H. and H. and the N. Y. Central Railroads. They are said to offer the least costly opportunity for distributing freight that breaks bulk at the yards north of the Harlem River. This commercial and industrial activity has interfered to some extent with dwelling use in the South Street section.

The waterfront between Grand and Rivington Streets is used for short piers of slight value, since they are occupied to a large extent as storage space for obsolete scrapped vehicles. North of this point from Rivington to East 14th Street, there is at present considerable shipping activity along the waterfront.

City property, such as schools, parks, playgrounds, fire and police stations, and other similarly used areas, is more or less uniformly scattered throughout the district. The recreation areas (Parks and Playgrounds) have been separately indicated from the other city property. There is a large amount of city-owned land between Chrystie and Forsyth Streets from Canal to Houston Streets; along the east side of Essex Street from Hester to

Houston Streets; and along the north side of Houston Street from Essex Street to the Bowery that is not in use. Essex and Houston Streets are to be widened and remaining property sold. The city contemplates some form of housing in the Chrystie-Forsyth area, but this presents many difficulties because of the restricted size and shape of the available buildable area.

Semi-public uses, such as Churches, Synagogues, Settlement Houses, Missions, and the like, are not concentrated in any locality but are scattered over all sections, as might be expected.

The area occupied by Marble Cemetery is small and located in the two blocks bounded by East 2nd Street—Bowery—East 3rd Street and First Avenue.

The land uses of the Lower East Side are divided between the eight general land-use classifications as follows:

Table No. 7

PRESENT LAND USES
LOWER EAST SIDE, NEW YORK CITY

Land Use	Area in Acres	Per Cent of Total Block Area
1. Buildings used exclusively for dwellings	62.0	10.7
2. Dwellings with Stores on ground floor	305.6	52.8
3. Business	12.4	2.1
4. Loft and Industrial build- ings	95.2	16.4
5. City Property†	48.0	8.3
6. Churches, Synagogues, Settlement Houses, etc.	23.7	4.1
7. Parks and Playgrounds	30.5	5.3
8. Vacant	2.0	0.3
Total Block Area	579.4	100.0
Total Area in Streets	318.3	

Total Area of Lower East Side* 897.7

Per cent of total area in streets	35.5%
Total block frontage	374,417 Lin. Ft.
Total frontage used for stores	167,087 Lin. Ft.
Per cent of total block frontage used for stores	44.6%

† Includes cemetery area.

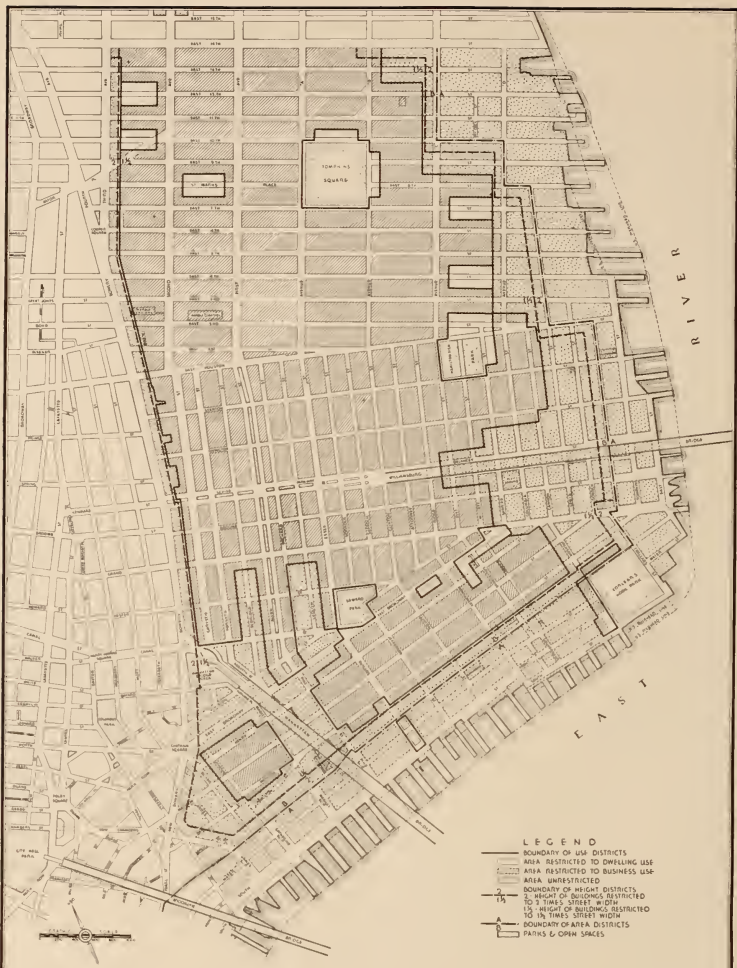
* Includes only area bounded by East 14th Street, Third Avenue, Bowery, Bayard and Market Streets, and East River. Piers excluded; only one-half of boundary streets included in street area.

While this study is not particularly significant if the entire area were to be completely reconstructed within a relatively short period of time, nevertheless it must be recognized that complete reconstruction cannot be accomplished in any short period of time. This study is necessary to ascertain secondary traffic objectives to and from which direct connections should be maintained in any permanent street plan. It is also useful in studying the extent to which foreign through traffic can be routed to avoid the dwelling districts. It also affords a basis for the determination of numerous conditions favorable or unfavorable for initial housing projects as well as where successive reconstruction projects of large scale can be undertaken most conveniently and most appropriately.



EAST BROADWAY—EAST FROM MANHATTAN BRIDGE

This study shows that 63.5 per cent of the land is now predominantly used for dwelling purposes, and approximately 18 per cent is in use for purposes more or less incidental to the dwelling use. Since only 18.5 per cent of the land is used exclusively for loft and industrial or business purposes, even though virtually the entire area is so zoned, this is unmistakable evidence that the district is a natural dwelling area and should be encouraged to so develop.



PRESENT ZONING DISTRICT MAP
 SHOWING USE-HEIGHT & AREA DISTRICTS
 AS AMENDED TO NOV 6, 1931

**LOWER EAST SIDE
 NEW YORK CITY**

LOWER EAST SIDE PLANNING ASSOCIATION

DARTHOLOW & ASSOCIATES
 CITY PLAN & LANDSCAPE ENGINEERS
 SAINT LOUIS — MISSOURI

PRESENT ZONING DISTRICT MAP

Plate Number Seven

The Building Zone Plan and Ordinance, amended to and including December 1st, 1931, divides the Lower East Side into several different districts, i.e., two height districts, two area districts, and three use districts.

The boundaries of the Use, Height and Area District are shown on Plate No. 7.

The Height Regulations for the Lower East Side provide for two classifications. The major part of the area is placed in the 1 and $\frac{1}{2}$ times height district. Within the limits of this height district as indicated on Plate No. 7 no building shall be erected to a height in excess of 1 and $\frac{1}{2}$ times the width of the street, but for each 1 foot that the building or portion of it sets back from the street line, three feet may be added to the height limit of such building or portion thereof. The two times height district consists of an area two or three blocks back from the entire water front. Similarly for the two times height district the building shall not exceed twice the street width, with 4 feet additional height permitted for each 1 foot set-back from the street line.

The Area Regulations for the Lower East Side provide for two districts (A and B). Buildings within the least restricted or "A" Area District are practically unrestricted, whereas a minimum rear yard of 2 inches for each 1 foot of building height or 10 per cent of the lot depth, which rear yard need not exceed 10 feet, is required in the "B" Area District.

The three Use Districts are defined as "Residence", "Business" and "Unrestricted". The Residence District, in addition to permitting dwellings for one or more families, allows such uses as boarding houses, hotels of thirty or more sleeping rooms, clubs, churches, schools, libraries, museums, courthouses, fire and police stations, philanthropic and eleemosynary institutions, hospitals and sanitariums. The Business District permits all retail uses and light manufacturing uses. Certain specified trades, industries and other land uses are excluded from this district.

The Unrestricted District permits of any land

use—or as expressed in the Zone Ordinance, "The term 'Unrestricted District' is used to designate the districts for which no regulations or restrictions are provided."

When Plate No. 7 is compared with the preceding illustration (Plate No. 6) showing present land uses, it is evident that although the land is used at present predominantly for residence, it is zoned for either Unrestricted or Business Use, with the Residence Districts comprising but an exceedingly small fraction of the total area. There are but ten small areas zoned exclusively for dwelling use, all quite scattered, and in no instance does any one of these spots comprise an entire block.

Some readjustment must be made between present and future use of land and this zone plan if zoning is to exert any marked beneficial influence upon the reconstruction of the Lower East Side. The present zoning is an actual handicap to reconstruction. With the land being used predominantly for residence and some stores incident to the dwelling use, it would seem logical to provide for a continuation of this rather than to contemplate that the dwelling use be subordinated to more speculative but less logical uses as is done by the present regulations.

A certain portion of the area which is most accessible and strategically located with respect to foreign traffic arteries and rapid transit facilities might well be placed in a business classification, as it is more difficult for frontage along the main traffic thoroughfares to develop for residential use. Conditions here will probably warrant the absorption of the entire frontage along main thoroughfares and much of the frontage along secondary thoroughfares for commercial purposes.

The present zone plan further provides for the continuation and extension of the present industrial and waterfront activities along the East River frontage. The future unrestricted use of the waterfront property from the Brooklyn Bridge to East 14th Street would not be desirable if the remainder of the area is to be used for dwelling purposes. This problem of waterfront use, how-

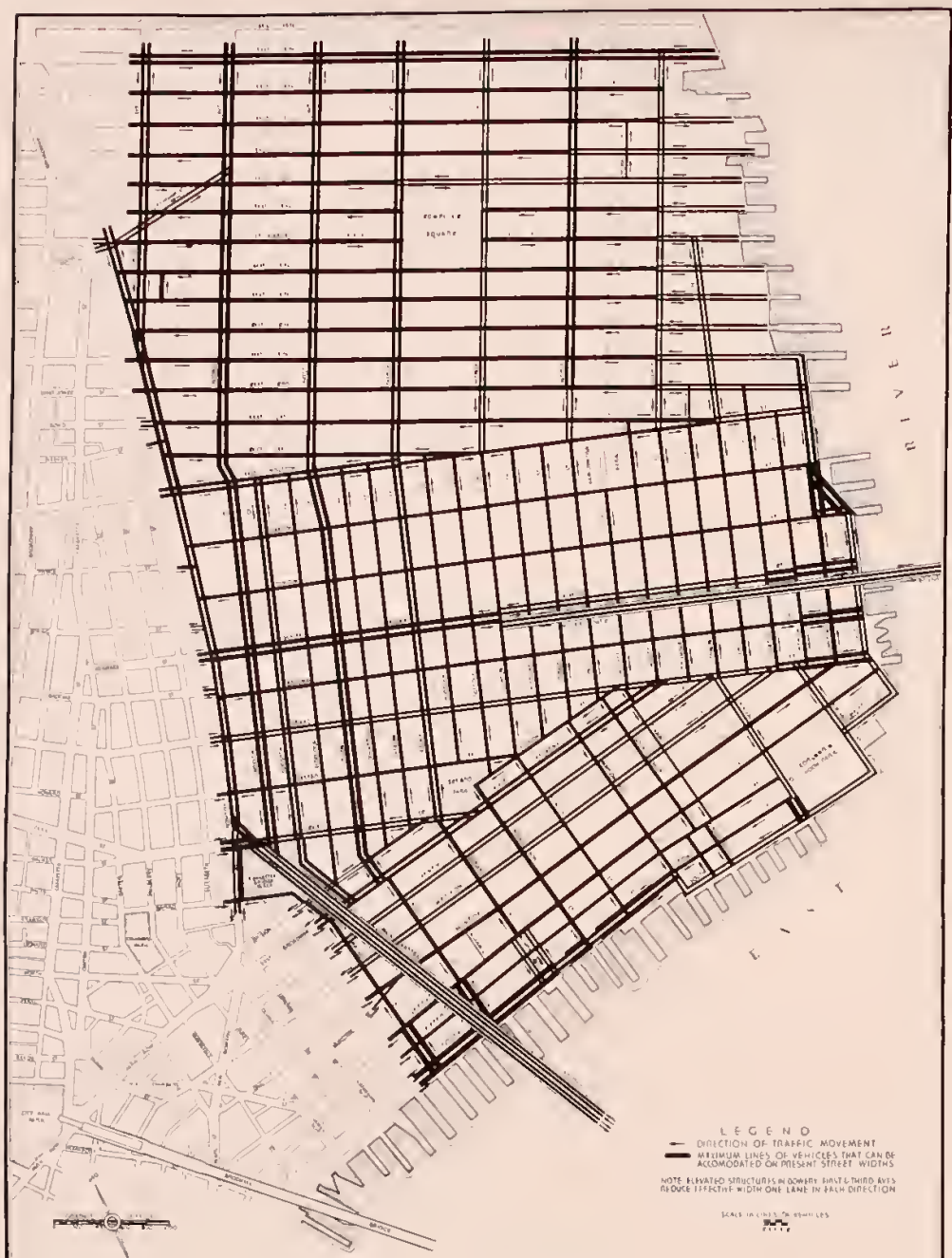
ever, cannot be answered by considering the frontage abutting on the Lower East Side as a separate and distinct entity, but only by reviewing the waterfront needs of Manhattan Island and the entire Port of New York. Information from the Port Authorities, Regional Plan and the Dock Commissioner is at variance on the need for retention of this waterfront for industrial use. It is believed the ultimate reconstruction of the Lower East Side will justify curtailment of industrial use of the waterfront.

Land uses have a very definite and direct influence upon a major street plan that may be proposed for any given area, such as the Lower East Side. The design and use of streets also influence the manner in which land is developed and used. These two city planning factors, i.e., street design and zoning, are to some extent mutually interdependent. Neither the present zoning nor the present street arrangement is well designed or conceived in accordance with an appropriate comprehensive plan of reconstruction for the Lower East Side.

The present confused and inextricably mixed uses of property demonstrated by Plate No. 6 constitute a more or less hopeless situation that can be corrected in no other way than by large-scale demolition and reconstruction. Present zon-

ing has failed to change present conditions or to encourage rebuilding or to otherwise bring about a desirable segregation and differentiation of property uses. Even though a comprehensive plan of main and secondary traffic thoroughfares and of minor streets be devised and used as a basis for large-scale reconstruction, it is doubtful if zoning of the general type and classification defined by the present regulations would afford a sufficient degree of protection. When complete studies for neighborhood units have been devised, it is possible that a special type of zoning regulation will be found desirable which would be more closely adjusted to the multiple-dwelling and local shopping needs.

Present zoning appears to be based upon the assumption that all of the Lower East Side is a logical commercial and industrial area. This is in error as indicated by present uses of property. The most logical uses of property in this district would seem to be multiple-dwellings throughout the great portion of the area, less industrial development along the waterfront, commercial and business uses along the main thoroughfares and rapid transit lines where the higher land values have been established as shown by Plate No. 5 and only such local stores and shops as are quite necessary in each neighborhood unit.

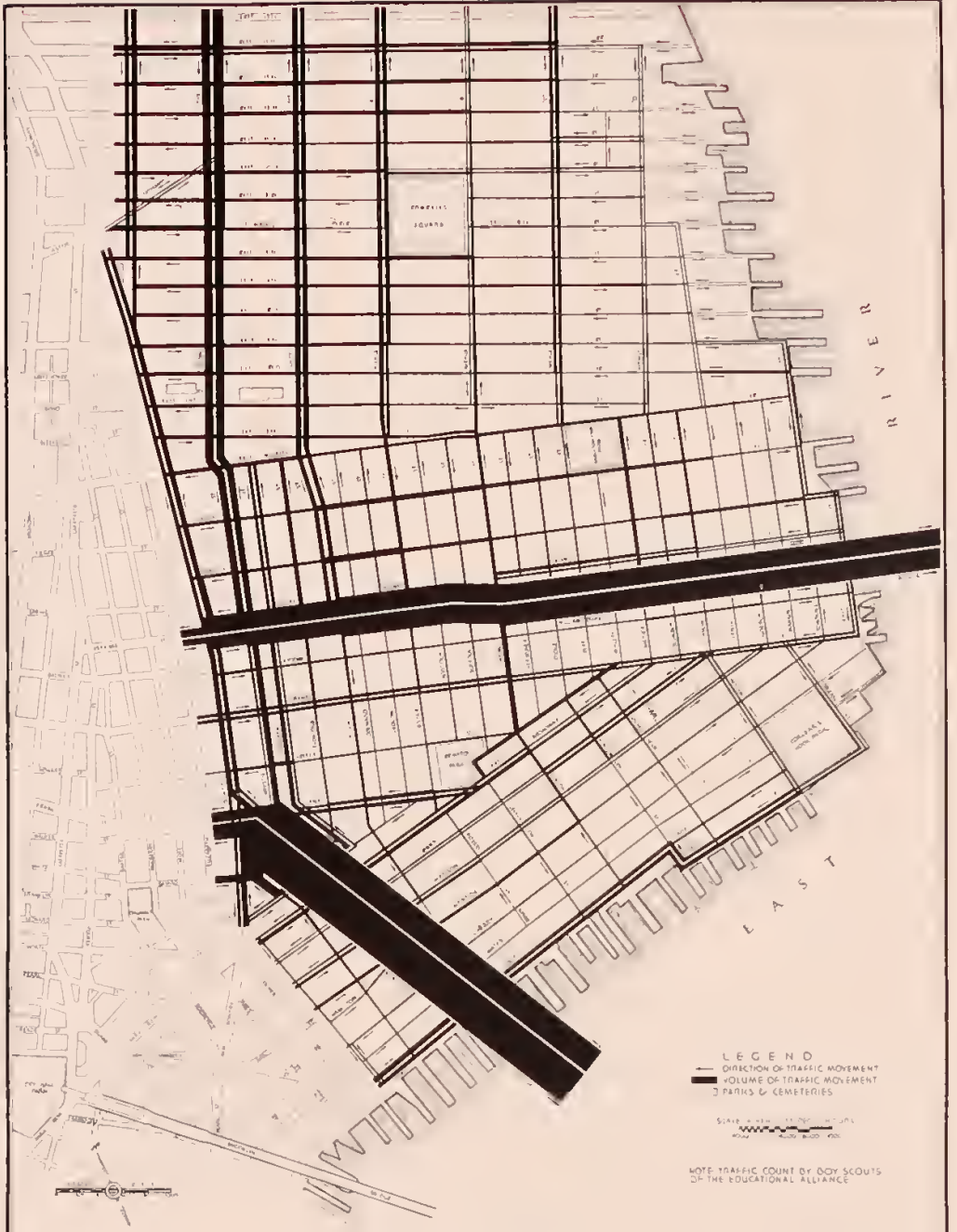


PRESENT STREET WIDTHS & DIRECTION OF TRAFFIC MOVEMENT

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI



TRAFFIC FLOW
WITHIN THE DISTRICT
DURING TWO HOUR PERIOD 4:00 TO 6:00 P.M.
TYPICAL WEEKDAY - WEEK OF JAN 18-1932

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLAN & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

PRESENT STREET WIDTHS, DIRECTION OF TRAFFIC MOVEMENT AND TRAFFIC FLOW WITHIN THE DISTRICT

Plate Number Eight

In considering the reconstruction of the Lower East Side, it cannot be assumed that the entire area can be cleared and a new street pattern imposed. That certain changes in the fundamental basis of street design are needed is quite evident and will be demonstrated. Such redesign should be capable of realization even though reconstruction cannot take place simultaneously over the whole area, but must be accomplished gradually by progressive rebuilding of large-unit areas.

STREET STRUCTURE OF LOWER EAST SIDE

Rectangular Patterns

The existing street structure consists of three separate gridiron patterns appearing in (a) the area north of Houston Street, (b) that part of the district between Houston and Division Streets, and Grand Street, (c) the area south of Division and Grand Streets.

Above Houston Street and east of Fourth Avenue the street pattern generally conforms to the 1811 plan for upper and mid-Manhattan with the avenues paralleling the Hudson and East Rivers approximately twice as wide (100 feet) as the numbered cross-town streets (60 feet) and about three times as far apart. The block sizes in this area are approximately 660 by 200 feet.

Between Houston Street and Division and Grand Streets the blocks are twice as long in the north-south as in the opposite direction, with all streets 50 feet wide except in a few instances—specifically Chrystie, Forsyth, Allen, Essex, East and Grand Streets. The block sizes generally approximate 400 by 200 feet.

From Division and Grand Streets to the East River the pattern is again reversed with the long way of the block paralleling the East River. In this area there is considerably less uniformity in block sizes than found in the other two sections, the average street width being 60 feet.

The coordination and widening of certain streets required to create necessary through routes have received much consideration. Second Avenue and the widened Chrystie Street constitute an im-

portant approach to the Manhattan Bridge. First Avenue and the widened Allen Street constitute an important through route, as does Avenue "A" and the widened Essex Street.

Houston Street, west of Essex, has recently been widened to 80 feet, also in connection with subway construction. As a result of the construction of the Williamsburg Bridge, Schiff Parkway was created by widening Delancey Street, which was originally 50 feet wide. Canal Street, west of the Bowery, was recently widened because of the volume of traffic between the Holland Tunnel and Manhattan Bridge.

The design of the streets in these general subdivisions was, no doubt, considered generous when originally planned. That was in the days of slow-moving, horse-drawn vehicles, and it is too much to expect that the early designers should have anticipated present-day traffic. As evidence that the needs of the times were given consideration by functional design, notice the "Slips" at several of the street ends along the East River. These were evidently planned to provide for accumulations of drays and commercial vehicles incident to the water-borne traffic.

In some instances the streets are continuous throughout the district, but in most cases there are jogs or offsets at the original subdivision boundaries, and considerable adjustment would be necessary to create continuous thoroughfares. Since the street widths in the three areas are not uniform, some street widening is necessary to secure continuous routes of uniform and adequate capacity.

Plate No. 8 shows by width of line the traffic capacity of the various streets, based on the present street widths. This is indicated in lanes of vehicles that could be accommodated. On the one-way streets, the line showing capacity is placed in the center of the street, and on the two-way streets the capacity indication is separated by a uniform space between the lines. No account is taken of movable obstructions to possible traffic capacity, such as parked cars, pushcarts, and the like, the capacity being determined by the maximum possi-

ble roadway obtainable upon present street width. Deductions, however, have been made for steel columns placed in the streets carrying elevated railways; an example of this may be seen by comparing First and Second Avenues. The former is capable of carrying four lines of vehicles in each direction and the latter only three because of the elevated columns in the roadway, although both have the same over-all street width.

Street Area

Plate No. 8 also shows the relation of the street and block area in the three main subdivisions.

Calculations based on the actual area in all blocks and that in all streets for the entire district show that there are 25,235,093 square feet in blocks and 13,893,650 square feet in streets, or 64.5 per cent for the former and 35.5 per cent for the latter.

DIRECTION OF MOVEMENT

The present police regulations with respect to direction of movement on the various streets is also indicated. Two-way streets are shown by arrows pointing in both directions and one-way streets by arrows pointing in the single direction in which movement is permitted under the present regulations. In general, the one-way streets alternate, although there are instances of adjacent streets on which movement is in the same direction. The one-way streets extend for the most part between the subdivision boundary streets, there being some few which divide in directions at intermediate points such as Avenues "A," "B" and "C." The directional regulations are subject to change by the police department at any time. Plate No. 8 shows those in effect in January, 1932.

Traffic capacity is not always determinable by actual street width and arrangement, since the manner in which street space is designed and used may modify its presumed capacity. It is necessary to know traffic regulations and the extent of conformity to them, such as parking of cars or location of pushcarts, and those other physical obstructions which are permitted to reduce the effectiveness of the present street widths.

A field survey was made to secure data as to actual street use on a typical week day. Each street was inspected over its entire length through the district and record made of the location of parked vehicles and pushcarts, number of effective moving traffic lanes actually in use and the location of street lanes used by street cars.

PARKING CONDITIONS

In general, the streets west of Avenue "A," particularly in the Chrystie-Forsyth locality and along

Second Avenue, appear to be the most intensively used for this purpose.

Parallel parking, with the vehicle parallel to the curb, is the most prevalent type in the district. Provision is made in widened street areas such as the "Slips" at the foot of some of the streets for 90 degree parking. Head-in or go degree parking also occurs on South Street, while in Astor Place between Third and Fourth Avenues the center of the street intersection is so used.

Illegal double and angular parking is quite common in the district, occurring even on some of the narrow one-way streets. This reduces the effective vehicular capacity of the streets and materially adds to traffic congestion and interference.

To the west of First Avenue, Allen and Pike Streets a total of 2,028 parked vehicles were observed as compared with a total of 4,898 in the entire district. More than 40 per cent of vehicles parked in the streets were concentrated in about 25 per cent of the total area of the district.

Placed end to end the total number of cars parked in the district would form a single line about 13.9 miles long. While there will no doubt be an increase in automobile registration with the reconstruction of the district, it is not likely that street parking requirements will change to any great extent. The district contains 70.9 miles of block frontage of which 27.4 miles are on the proposed major and secondary thoroughfares. The present amount of space used for parking is 13.9 miles or 19.6 per cent of the total block frontage, or 50.8 per cent of the major and secondary street frontage. This indicates that ample parking space should be available on those streets which are required for through and secondary traffic, assuming street parking is to be permitted. The future demand will probably not exceed that of today and could probably be considerably reduced by adequate design of unit areas.

Street Car Routes

In many instances on the narrow streets the street car lane is the only effective lane available to traffic. The streets are completely blocked when stops are made by the street cars.

Since street car lines are quite numerous throughout the district a considerable number of streets have either single or double car tracks. Several of these tracks may be abandoned and removed as proposed in the transit plan which follows. This would result in improvement in vehicular traffic conditions.

Industrial Areas

Among other conditions which this investigation disclosed is the comparative lack of parking in those areas along the waterfront devoted to industrial use.

Except at the bridges and to some extent along South Street west of Market Street, there is a noticeable absence of parked vehicles on the river-front streets. If these areas were being intensively used and a large amount of business and commerce being transacted there, there would be more intensive parking, similar to that now found on South Street between Catherine and Market Streets.

PUSHCART MARKETS

Under authority of Sections 47 and 49 of the Charter of the City of New York and article 22 of the Farms and Market Law the Board of Aldermen are permitted to pass ordinances establishing public markets and placing their control under the Department of Public Markets. Chapter 15, Article 1, Sections 1 to 6 of the Code of Ordinances of the City of New York prescribes rules for the care and use of markets, regulation of facilities and issuance of permits. Section 20 of Article 2, Chapter 15, designates certain *"territory and streets or sections thereof extending only from house line to house line on each block and for a distance not more than 10 feet from the curb lines to the center of the roadways, unless otherwise specified for public market purposes for the sale of fruits, vegetables, produce or other commodity."*

Each separate area as designated by city ordinance is given a separate market name. Every street between Delancey and Stanton from Chrystie to and including Lewis is indicated for such

use. First Avenue, from East 14th to Houston Streets; Avenue "C" from East 10th to East 3rd Streets; Monroe Street from Pike to Gouverneur; Grand and Houston Streets from Allen to Clinton; Canal Street from Chrystie to Essex; and Monroe from Pike to Gouverneur form the major section designated within the Lower East Side area.

Pushcarts are not concentrated within the designated areas but are found at scattered locations generally throughout the district.

On December 29-30, 1931, a total of 1,509 pushcarts were found within the limits of East 14th Street, Fourth Avenue, Bowery, Bayard and Market Streets and the East River. Of this total of 1,509 pushcarts, 235 or 15.6 per cent are found outside of the areas designated for such use. The total number of pushcarts found during this survey is relatively low compared to other seasons of the year. It has been estimated that during the spring and summer months there are about 3,500 pushcarts in use within the Lower East Side.

The majority of the pushcarts are not uniformly spread over the entire area designated for their use, but are found concentrated on First Avenue from East 4th to East 14th Streets; on Avenue "C" between East 3rd Street and East 10th Street; on Orchard Street between Houston and Hester Streets; on Pitt Street between Delancey and Rivington; on Rivington Street from Pitt to Cannon Streets; on Hester Street between Allen and Division Streets; and on Monroe Street between Rutgers and Clinton Streets.

A study was made to ascertain to what degree the pushcarts interfere with traffic movement. The most marked instance is on First Avenue where the effectiveness of the 100-foot width is reduced by



SCHIFF PARKWAY—WEST FROM WILLIAMSBURG BRIDGE



PUSHCART MARKET ON A 50-FOOT STREET

pushcarts, parked automobiles, and by elevated columns to a 2-lane roadway. Avenue "C" traffic is interfered with, but to a lesser extent. The other market locations do not interfere with through traffic movement to any great extent since the streets used are of minor importance in any traffic circulation scheme. Additional and more effectively enforced pushcart regulation, with concentration within specified market areas, could be accomplished whenever deemed necessary, and vehicular traffic movement would consequently be facilitated. Sanitation, obstruction to fire apparatus, improper use of public street space for a private purpose, all are factors that could logically be presented to substantiate the necessity for removing pushcarts from the streets.

TRAFFIC FLOW

Plate No. 8 also shows the direction and volume of traffic movement on every street within the district.

The volume is indicated by the varying width of line and is based on a traffic count of all vehicles, excluding street cars, made during the week of January 18, 1932, by the Boy Scouts of the Educational Alliance.

Before discussing in detail the findings of this survey it must be emphasized that the present conditions of certain streets, such as Allen Street between Schiff Parkway and Canal Street, Essex Street from Houston to East Broadway, and Houston Street between the Bowery and Essex Street, were more or less unusable due to subway construction, and hence cause some distortion in the relative volumes of traffic on these streets. The strategic location of these arteries indicates that they will attract larger volumes of traffic when improved than the survey indicates.

The greatest volume of movement through the district is on the approach streets leading to the Manhattan Bridge. All movement from the approach thoroughfares, on Canal, Bowery, Chrystie and Bayard Streets concentrates in the immediate vicinity of the bridge plaza. Canal Street carries for the greatest percentage of this movement. Chrystie Street—Second Avenue attracts a fairly large per cent of the traffic from the bridge which is north bound on Manhattan Island.

The through movement along Schiff Parkway from the Williamsburg Bridge is the second heaviest traffic movement. A considerable per cent of the east and west bound volume found at the bridge-head carries completely across the district to the Bowery while the rest dissipates on the intermediate streets. The condition shown at the

intersection of Schiff Parkway and the Bowery may evoke some question as to what happens to the east-west movement at this point. The volume of east-west movement on Kenmare Street west of the Bowery is substantially lower than the east-west movement on Schiff Parkway east of the Bowery. This is accounted for by the turning movements at the intersection; right turns from Schiff Parkway north onto the Bowery; left turns from Schiff Parkway south into the Bowery, and finally left turns from the Bowery into Schiff Parkway.

The greatest volume of north-south movement and the third in point of volume for the district occurs in Division—East Broadway—Forsyth—Chrystie and Second Avenue. This traffic is en route to and from the up-town areas and the Manhattan Bridge. It is interesting to note that the count on Second Avenue between East 3rd and East 4th Streets showed about 2,800 vehicles for a two-hour period. This is equivalent to approximately 350 vehicles per lane per hour when the two parking and two street car lanes are allowed for.

The comparison between the volume of traffic handled on certain of the more strategically located thoroughfares and the minor streets is striking. When and if the recommended improvements designated on the major thoroughfare plan have been carried out and the traffic still further concentrated, an unusual opportunity exists for the readjustment and closing of many of the unnecessary and little used minor streets. The city can be saved maintenance and reconstruction charges for a certain percentage of these unnecessary streets, and the creation of pedestrian ways and strip parkways offers the opportunity for establishing additional park-like areas at little or no great cost to the district. This can be accomplished in an area where open space is seriously needed.

Some readjustment of streets and street obstructions such as the elevated railways in First and Third Avenues, the removal of certain street car lines and the ultimate widening of the more strategically located streets which are best adapted for use as major and secondary thoroughfares will afford sufficient capacity to care for all future requirements of both foreign and local traffic movement.

Assuming that the general traffic characteristics will remain approximately as now found, this study affords a reasonable and logical basis for selecting the major traffic thoroughfares, providing that all of the other relevant factors are considered and coordinated therewith.

PART TWO
THE MAJOR THOROUGHFARE PLAN



MAJOR TRAFFIC THOROUGHFARES

Plate Number Nine

This chapter contains recommendations for a system of major thoroughfares to provide for the expeditious handling of all foreign traffic through the district. A plan for major traffic thoroughfares is the first prerequisite in any consideration of the complete reconstruction of the Lower East Side.

Part One, "Existing Conditions," provided the necessary factual data for these recommendations. The results show conclusively that it is necessary to anticipate a complete reconstruction of the area if the most desirable and satisfactory use of the land is to be realized.

The traffic within the district divides itself into two separate and distinct types. First, there is foreign through movement, and second, local traffic movements of importance within the district. This chapter pertains only to the first classification—foreign through movement—while the local or secondary traffic thoroughfares are discussed under Plate No. 10.

The foreign traffic now found using the streets of the Lower East Side has certain definite objectives. The four predominating movements are as follows:

1. *Traffic Between Brooklyn—Queens and the Business Centers on Manhattan Island.*

The Williamsburg and Manhattan Bridges provide direct access between Brooklyn and Manhattan. The bridge plazas of both structures are located well within the boundaries of the district. The traffic from Brooklyn entering over the Williamsburg Bridge destined for the business centers on Manhattan continues along Schiff Parkway via Kenmare Street to Lafayette and Centre Streets for connection to the uptown and downtown centers. Less desirable and less used connection with these centers is also accomplished by turning north and south on Allen and certain of the minor streets between Allen and Clinton. The traffic entering via the Manhattan Bridge uses Canal Street to Lafayette and Centre or Broadway, while traffic destined for uptown centers uses the Bowery or the Chrystie Street and Second Avenue route. There is also a certain amount of this traffic that filters off the main routes and uses minor streets, the most noticeable of which is Hester Street, westbound from Chrystie Street in the morning and eastbound during the evening rush hours.

2. *Traffic Between Brooklyn—Queens and New Jersey via the Holland Tunnel.*

The main bulk of this movement enters Manhattan over the Manhattan Bridge and uses Canal Street direct to the Holland Tunnel.

3. *Traffic Between Upper and Lower Business Centers on Manhattan Island.*

The greatest percentage of this movement is taken care of west of the district on Centre, Lafayette, Broadway and West Streets. This can reasonably be expected to continue in the future, since in using the streets of the Lower East Side it is necessary to detour a considerable distance eastward from a straight line between the major objectives. The Allen Street—First Avenue—East Broadway route will care for probable immediate future requirements. The Bowery and Chrystie—Second Avenue also are available to care for a part of this movement. South and Pike Streets provide direct connections to Allen Street—First Avenue for the traffic destined between the Lower East River waterfront and upper Manhattan.

4. *Crosstown Traffic Between East and West Sides of Manhattan Island.*

Direct crosstown movement is provided on 14th Street, Houston and Canal Streets between the Lower East Side and the Lower West Side areas. Canal Street is used for various functional traffic movements and is by far the most intensely used street in the area investigated.

All of the major foreign traffic requirements outlined above occur in the area west of Allen Street and First Avenue, and can well be confined to this area in the future. Such a contention can be justified for the following reasons:

1. If the avenues and streets east of First Avenue—Allen Street are used for through foreign traffic a "bottleneck" will be created in the vicinity of 23rd Street where all of these avenues converge into First Avenue. Such a condition is neither desirable nor can it be economically justified.

2. The Williamsburg and Manhattan bridgehead locations are favorable to such an arrangement.

3. If through traffic in Manhattan were obliged to use the avenues east of First Avenue—Allen Street, it would be necessary to travel a greater distance between the uptown and downtown busi-

ness centers or between other important objectives.

4. If an express double-deck highway is to be provided on the East Side it might more economically be constructed in Chrystie-Second Avenue or Allen Street-First Avenue. Such a location would serve as a counterpart for the West Side marginal highway and would not unnecessarily detour traffic to the same extent as a marginal express highway along the East River.

5. Since the ultimate destiny of a large part of the area is for some form of dwelling use it is essential to reduce the foreign through traffic to the absolute minimum. The express highway location might better be through a business or industrial area.

6. There is no economic advantage to be gained by using any form of major traffic thoroughfare for foreign traffic east of Allen Street-First Avenue, and there are numerous disadvantages both of an economic and social nature.

The detailed recommendations for the major thoroughfares to carry the main foreign through traffic, and a discussion of present and proposed widths are as follows:

DESCRIPTION OF MAJOR THOROUGHFARES

1. *Williamsburg Bridge-Schiff Parkway-Kennmare Street.*

The street car tracks should be removed from the Williamsburg Bridge and two additional lanes in each direction made available for vehicular traffic. The through foreign traffic should be carried over and under Clinton Street by a viaduct on the north side of Schiff Parkway and a subway on the south. The width of 200 feet now found in Schiff Parkway from Clinton to Norfolk Streets is sufficient to accomplish this purpose, but in the block between Essex and Norfolk Streets the width should be increased from 150 to 200 feet. The section from Essex Street to the Bowery, which is now 150 feet wide, is ample although some minor reduction of the center parking strip might be made when and if the volume of bridge traffic increases. The extension of Schiff Parkway between the Bowery and Centre-Lafayette Street by way of Kennare Street (80 feet wide) should be increased to at least 100 feet or an 8-lane capacity. This combination of streets now serves and should continue to function as a direct lead for traffic to and from the Williamsburg Bridge and the uptown and downtown business centers. Opportunity for diversion of traffic bound northward is offered at Allen Street, at Chrystie Street and at the Bowery. Grade

separations are contemplated at Clinton Street and Schiff Parkway, and if an express highway is developed in Chrystie or Allen Streets suitable ramp connections should be made at Schiff Parkway.

2. *Manhattan Bridge-Canal Street.*

This second entry from Brooklyn provides direct connection to the Bowery, to Chrystie and to Canal Streets. At present the movement to and from the bridge on Canal Street has three separate and distinct objectives. First, it connects the Brooklyn-Queens traffic with the up- and downtown business centers via Lafayette-Centre Streets, Broadway and West Street. Secondly, it provides for the direct New Jersey-Brooklyn and Queens movement. Thirdly, it provides for crosstown movement between the east and west sides of Manhattan Island.

Canal Street now has a roadway of generous width (75 feet), and if additional roadway space is ultimately required it should be accomplished by the double decking of the street, either by two roadways cantilevered from the side of the street or with a single structure in the center. Direct connections should be provided for such a structure to the upper roadway of the Manhattan Bridge, to the elevated roadway in West Street and to the Holland Tunnel. The recently increased width in Canal Street should be adequate for any form of two-level street treatment.

3. *Chrystie Street-Second Avenue.*

Direct connection for north and south bound traffic is provided from the Manhattan Bridge Plaza via Chrystie Street-Second Avenue and the Bowery-Third and Fourth Avenues to the uptown business areas. The Second Avenue-Chrystie Street thoroughfare does not connect directly to the center or to the upper south bound roadway of the bridge, so that at present traffic must use either the Bowery or Forsyth Street to make this movement. The use of the Bowery makes a direct connection possible, but if Forsyth Street is used it requires a routing by way of Division or East Broadway to Market and then to Bayard Streets and the Bowery. Such a routing, although indirect, provides the most reasonable solution without materially increasing the size of the Bridge Plaza. It is recommended that a cut-off be provided from Chrystie to Forsyth in the block between Canal and Hester Streets to facilitate this movement. When the conflict between turning movements reaches the point of congestion then a separation of the grade of the north and south bound traffic should be made. The present width

of Chrystie and Second Avenue (100 feet) should be sufficient for a surface treatment if a 72-foot roadway is constructed and the street car converted into a bus line. Forsyth (from Hester to Division Streets), Division, Market and Bayard Streets should be widened to a width of 80 feet or 6 lanes. This is essential to provide for satisfactory



CHRYSITIE-FORSYTH AREA—NORTH FROM
MANHATTAN BRIDGE

south bound traffic movement from Chrystie Street to the south bound roadways on the Manhattan Bridge.

The Regional Plan of New York and Its Environs goes one step further and recommends the ultimate construction of a depressed roadway using the entire area from Chrystie to Forsyth and from Canal to Houston Streets for a combined express highway and strip park. Some such treatment, assuming the express highway is necessary, could more economically be confined to Chrystie Street and not absorb all of the area between Chrystie-Forsyth. No matter what type of structure—depressed or elevated roadway—is placed in Chrystie-Second Avenue it will create an involved intersection with the Bridge Plaza at Canal Street. For this reason and also because of the more favorable location of Allen Street-First Avenue it is suggested that any north-south express two-level highway be placed on Allen Street-1st Avenue, where direct connections to the upper level roadways are possible. The street width is now sufficient to permit the construction of an elevated highway as far north as Houston Street; it is possible to change from an elevated to a depressed roadway at this point, similar to the suggestion of Regional Plan for Second Avenue-Chrystie and Forsyth. The es-



ALLEN STREET—NORTH FROM CANAL STREET

tablishment of the Allen Street-First Avenue route for the express double deck highway also eliminates any conflict that might arise as a result of the construction of the Second Avenue Subway. It should also be noted that the creation of a route in this location is almost an exact counterpart of the present West Side double-deck highway.

4. *Allen Street-First Avenue-Pike Street-South Street.*

The present width of Allen Street (approximately 138 feet) from East Broadway to Houston is sufficient for both the initial surface treatment and also to care for an elevated structure if one should become necessary. The surface treatment of First Avenue should not require more than a width of 100 feet if the conditions created by push-cart markets, elevated railway and parking violations are corrected. The removal of the elevated or adjustment of the elevated columns will increase the present capacity of this street.

Pike Street should be widened from the present width of 60 feet to a width of not less than 100 feet. This connection will provide a direct and commodious extension via South Street to Lower Manhattan. South Street is now sufficiently wide to accommodate any traffic from Allen and Pike Streets.

5. *Third Avenue.*

The present width of Third Avenue (100 feet) is sufficient to adequately care for the volume of traffic that can be expected to use this route. It will serve as a supplement and continuation of the Bowery to and from the Manhattan Bridge and the uptown business sections.

6. *Fourth Avenue-Bowery.*

Fourth Avenue is a continuation of the Bowery

from East 8th Street north to Union Square. At present this street is intensely used and it would appear that some widening or other treatment might be necessary in the future. This portion, however, is beyond the boundaries of the district investigated and no specific recommendation is made.

The Bowery from Cooper Square to the Manhattan bridge-head has its effective capacity materially reduced due to the concentration of street car tracks and location of the elevated columns. There are four street car tracks from Cooper Square to Broome Street, three from Broome to Grand and two from Grand to Chatham Square. The removal of two tracks from Cooper Square to Broome Street and of the third track from Broome to Grand Streets will increase the vehicular capacity. The roadway width at present varies from 80 to about 116 feet. No widening is recommended but the vehicular capacity can and should be increased by the adjustment of car tracks and probable ultimate removal of the elevated railway. The portion south of the Manhattan Bridge Plaza between Canal and Bayard Streets has been widened recently to care for the traffic encircling the Bridge Plaza and entering the south upper roadway from the Bowery. The remaining block from Bayard to Chatham Square should be widened on the east side to provide a suitable outlet to and from the widened Park Row.

7. *New Bowery-Pearl Street.*

This route should be improved south of Franklin Square by the widening of Pearl Street. The section between Franklin and Chatham Squares is now sufficiently wide to care for the volume of movement that will be destined to continue northward on the Bowery to the 34th and 42nd Street business centers or vice versa.

8. *Lafayette Street.*

Lafayette Street is now the most intensely used north and south thoroughfare in lower Manhattan. The character of improvements along this route would make any widening prohibitive in cost. While improvement of this street would be of aid in solving the traffic problems of the Lower East Side, it is beyond the area directly under consideration and no increased capacity can be recommended. A certain degree of relief will be accomplished by the widening of Centre Street.

9. *Centre Street.*

The improvements abutting on Centre Street are not as valuable as are now found on Lafayette Street. The street also leads directly into the Civic Center proposed and being built around Foley Square and City Hall Park. The Regional Plan of New York recommends widening to provide a more appropriate and commodious northern entry to this center. The section recommended for widening is from Foley Square to Kenmare Street. No further recommendations are made with respect to this project, since it is also beyond the limits of the area considered in the present study.

10. *Park Row-Division Street-East Broadway.*

The creation of a direct entry to the Civic Center and to the downtown business center from the Lower East Side is a prime essential. This can be accomplished most economically by the widening of Park Row and East Broadway-Division Streets and the possible creation of a park in the area between Division Street and East Broadway. Park Row should be made not less than 100 feet wide with an effective traffic capacity of 8 lanes. East Broadway and Division Street should be made 100 and 80 feet wide respectively, especially if the area between is to be acquired for park use. This improvement will materially aid traffic between the downtown and uptown business centers and make additional north and south arteries of travel more readily available. It will make the Bowery, Chrystie, and Allen Streets each more accessible and usable for such movement.

11. *East 14th Street.*

East 14th Street is at present 100 feet wide. It now serves and will continue to serve as a cross-town thoroughfare between the East and West Sides. No widening is necessary since the present width (100 feet) is sufficient to handle a greatly increased volume of traffic. Congestion is found at Union Square but this can be reduced by the construction of a viaduct on Fourth Avenue over 14th Street when and if necessary.

12. *East Houston Street.*

East Houston Street has just been widened to 80 feet as a result of the construction of the Eighth Avenue subway. This new street width could and should be increased to 100 feet at the present time, since the north side buildings have been razed from Broadway east to about Essex Street and the additional width is now available.



MAJOR AND SECONDARY TRAFFIC THOROUGHFARES

Plate Number Ten

Certain additional traffic thoroughfares are needed to provide for important local traffic movements within the district and to afford direct access to and from the major thoroughfares leading to the important centers in Manhattan and the other boroughs. A description of the routes known as secondary traffic thoroughfares is given in detail below.

Plate Number 10 has been prepared to show the complete system of routes and improvements proposed and the relationship between the secondary and major thoroughfares.

Consideration was given to the possibility of completely redesigning the present street pattern in the areas east of First Avenue, Allen and Pike Streets. Various plans for more or less direct connections between assumed centers of business concentration or of community interest were designed. The bridge plazas also become centers of special significance in such schemes. Comprehensive plans of such character, however, would probably be possible only where there were no existing streets, utility services, and buildings to be considered or salvaged. A more or less rectangular pattern utilizing existing services was finally decided upon because other types of plans would involve tremendous extra expenditures and the more or less insuperable difficulties that would be encountered due to endless readjustments. If it were possible to conceive or anticipate a complete reconstruction occurring simultaneously over the whole area, then another type of plan might possibly be realized; but since the reconstruction must probably take place by some smaller unit development, the most practical method tends to indicate an adherence to a rectangular street pattern.

The location and capacity of most of the sub-surface public utilities are assumed, after preliminary investigation, to be more or less satisfactory for the present and reasonably distant future, since they appear to be capable of carrying materially increased loads. They represent such a substantial investment in public and private moneys that any extensive abandonment or reconstruction would be impractical in most cases. The adequacy and the condition of the sewer system appear to

be in question and are, perhaps, worthy of special investigation by competent authority.

The designation of a rectangular system for the secondary thoroughfares is perhaps more favorable to the most economic arrangement of large-scale building units than any other form of general design that might be devised for the area under consideration.

The streets that are recommended as secondary thoroughfares were determined by a division of the area into units of size sufficient to permit large-scale neighborhood unit development, although there are no precedents or available experiences which furnish evidence as to the exact desirable sizes of neighborhood units. All of the secondary thoroughfares described in detail immediately below are recommended to have a width of 100 feet. Past experience and detailed analysis of the requirements of an area of intensive multiple-family dwellings would seem to indicate that thoroughfares of this width, if spaced about one-quarter mile apart, should be sufficient for all such secondary traffic needs. Further, such an arrangement is sufficient for practically all other types of development, with the exception of very large business centers.

With these considerations in mind, the following streets were selected to serve principal local traffic needs. They are indicated in detail on Plate Number 10 and are described in the following tabulation:

EAST AND WEST SECONDARY THOROUGHFARES

1. *East 14th Street.*

East 14th Street from First Avenue to the East River is recommended as the most northerly of the east-west thoroughfares. The present width of 100 feet is sufficient.

2. *East 10th Street.*

East 10th Street from the East River to Third Avenue has been designated as a secondary thoroughfare. It is at a sufficient distance from East 14th Street to provide for neighborhood units of such size as to be readily adaptable to large-scale development. It is now used by the 8th Street

Crosstown Street Car line from Avenue "A" to the East River. The present width of 60 feet should be increased to 100 feet before the area on either side is rebuilt.

3. *East 5th Street.*

East 5th Street provides the logical division point between East 10th Street and Houston Street. The neighborhood units on the south side of this secondary street are not rectangular but no great difficulty is anticipated in adapting this irregular shaped area to an efficient and economical building arrangement. The present width is 60 feet, which is recommended to be increased to 100 feet. No transit facilities are contemplated on this thoroughfare but additional street width is necessary and desirable to provide light and air. Both East 5th Street and East 10th Street, previously described, connect directly with First, Second and Third Avenues and hence provide direct access from the tributary area to the major north-south thoroughfares of Manhattan Island.

4. *East Houston Street.*

East Houston Street from First Avenue to the East River is recommended as a 100-foot secondary highway. Such widening as would be required would be doubly necessary if the proposed vehicular tunnel were constructed to Metropolitan Avenue, Brooklyn, as recommended by the Regional Plan. This width would expedite flow through the district with the least detriment to abutting property.

5. *Grand Street.*

Grand Street is now serving in the capacity of a secondary thoroughfare. The present width of 70 feet should ultimately be increased to 100 feet, if and when the adjacent properties are rebuilt. This street affords direct, easy access cross-town to the West Side and connects directly to all of the major north-south arteries.

6. *East Broadway.*

East Broadway from Allen to Grand Streets is an extension of the Park Row-Division-East Broadway route to the downtown section. Access is provided from the tributary area directly up and down town. The ultimate width should be 100 feet.

7. *Canal Street.*

Canal Street from Chrystie Street to East Broadway serves to connect the southeast section with the east and west side of Manhattan Island. When and if the Canal Street and Chrystie or Allen Street double deck express highways are realized, this street will be even more intensively used for cross-town traffic. The present traffic regulations at

the Manhattan Bridge Plaza hamper the use of Canal Street eastward from Chrystie Street for cross-town traffic purposes.

NORTH AND SOUTH SECONDARY THOROUGHFARES

8. *Clinton Street—Avenue "B."*

Clinton Street and Avenue "B" provide for a secondary thoroughfare about one-quarter mile east of Allen Street—First Avenue. In the initial studies of spacing for the north-south secondary thoroughfares, Essex Street—Avenue "A" and Pitt-Gouverneur—Avenue "C" were first designated; but later analysis of the possibilities of reconstruction by unit areas, location of Manhattan Bridge and of the Williamsburg Bridge, and other considerations indicated that a better arrangement could be obtained by the use of Clinton Street—Avenue "B" and Columbia Street—Avenue "D." The route should ultimately be made uniformly 100 feet wide, and the street grades at the Williamsburg Bridge separated.

9. *Avenue "D"—Columbia Street.*

This combination of streets is recommended for improvement from Grand Street to East 14th Street, with an ultimate width of 100 feet. Access to the downtown center is provided directly via East Broadway, while any uptown movement can be made within the district by using the various cross-town secondary connections.

10. *East River Drive.*

Plans for the development of an East Side express highway—single and double deck—along the East River have been advanced from many sources—Day and Zimmerman, the Regional Plan of New York, and the Borough President's office. The main conception has been to provide an express highway as a counterpart of the West Side project which is now being realized.

There are many reasons why an express highway along the East River front does not accomplish a particularly desirable result either from the standpoint of the reconstruction of the district or from a viewpoint of the development of Manhattan Island. Briefly they are:

1. Following the East River shore line does not provide a direct route uptown from the downtown area but forces traffic to detour quite a distance to the East.
2. Disruption of commercial and industrial activity along the waterfront north of 24th Street would involve great cost in acquiring and constructing a roadway east of the present shore line. If the thoroughfare is routed



THE EAST RIVER WATER-FRONT—SOUTH FROM
WILLIAMSBURG BRIDGE



THE EAST RIVER WATER-FRONT—NORTH FROM
WILLIAMSBURG BRIDGE

over 24th Street to First Avenue, then undue congestion will result at this point.

3. It would seem that if such an express highway becomes necessary, it might more advantageously be located on Chrystie-Second Avenue or Allen Street-First Avenue. Such later location would make it more nearly an exact counterpart of the West Side development.
4. If most of the area of the Lower East Side is to be reconstructed for residential use, then it is essential that as much of the waterfront as possible be converted into park land; and the most effective use of such park will be accomplished by keeping it entirely free from traffic.

Since that portion of the East River Drive between Grand Street and East 14th Street has been agreed upon, it is recommended that whenever this is constructed, it be used entirely for local purposes. A connection to South Street is recommended, and one possibility is shown on Plate No. 10. The entire route should as far as possible be made indirect for the purpose of discouraging through traffic. The creation of this river-front drive and marginal way need not be of permanent disadvantage to a complete multiple-family dwelling use of the district, since it will be possible at any future time to eliminate the roadways and create a marginal river-front park. Its construction will, however, retard the most satisfactory possible development of the adjacent areas.



COMPARISON OF PRESENT USE WITH FUTURE CAPACITY ON MAJOR AND SECONDARY TRAFFIC THOROUGHFARES

Plate Number Eleven

For the purpose of determining the adequacy of the proposed major and secondary traffic thoroughfares, their proposed capacity has been shown on Plate No. 11 in relation to the present volume of traffic now using them. It is here assumed that all of the traffic now entering the district will be concentrated on the major and secondary thoroughfares. Such an assumption is reasonable since the areas bounded by these traffic thoroughfares must be developed by large-scale building units and certain of the intermediate entries ultimately can either be closed or used for access to the unit only.

Plate No. 11 shows Avenue "B," First, Second and Third Avenues as northerly entries to the district at East 14th Street, and the combined traffic now using Avenues "A," "B," "C," "D," First, Second and Third Avenues is shown concentrated on the four main entries. The present volume of movement is shown north of East 14th Street. The proposed capacity is shown south of East 14th Street. This future capacity was calculated on the basis that all major and secondary streets would be made 100 feet wide. The capacities were reduced to allow for parking requirements and also for the street car lines that are proposed to be retained. (See Plate No. 20.) The elevated structures in First and Third Avenues would ultimately be replaced by the Second Avenue subway. During the maximum hour approximately 6,145 vehicles used these northern entries. The capacity of the major and secondary thoroughfares is 7,200 vehicles per hour, which provides for a 17.2 per cent increase over present use. Avenue "B" is the only street where widening is necessary.

The western entries are East 14th Street, East 10th Street, East 5th Street, Houston, Schiff Parkway (Kenmare Street), Grand and Canal Streets. The boundary streets on this side of the district are Third Avenue and the Bowery. The present traffic on all the existing streets is shown concentrated on these major and secondary thoroughfares on the west side of the boundary streets while the proposed capacities of each are shown on the east side. East 10th Street, East 5th Street, East Houston and Grand Streets all should be widened to 100 feet whenever the abutting property is re-

built. There are no changes recommended which will affect the present capacity of East 14th or Canal Streets west of the Bowery.

It is proposed to set back the curbs by reducing the width of the center parking strip on Schiff Parkway so that the capacity can be increased from two to four moving lanes in each direction.

Now, 12,635 vehicles enter and leave from the west during the maximum hour. The future capacity would provide for 20,400 vehicles during an hour or an increase of 61.5 per cent.

The capacity of the eastward or bridge entries are probably fixed for a considerable period of time. The Williamsburg Bridge capacity is now being increased by the conversion of the north street car lane to a vehicular roadway. It is recommended that the south street car lane be similarly treated, and further that the bridge and Clinton Street traffic be separated. The present movement of vehicles on the Williamsburg Bridge is close to the capacity of the existing roadways. A 135.0 per cent increase would, however, be provided by the conversion of both street car lanes to vehicular roadways, since the hourly capacity would then be 7,200 vehicles while the present movement is 3,060 vehicles. Something over 50 per cent increase of additional traffic above the present maximum hour volume can be cared for on the roadways of the Manhattan Bridge as now arranged. Improvement is required in the Bridge Plaza to facilitate movement between the bridge roadways and the approach thoroughfares.

The entries from the southwest (East Broadway, the Bowery, and South Street) during the maximum hour now handle about 3,425 vehicles at Catherine Street. The recommended capacity will care for a 75 per cent increase or a total of 6,000 vehicles per hour. East Broadway is recommended for widening to 100 feet.

In summarizing, it is found that all entries now, during the maximum hour, care for 30,463 vehicles, while the proposed major and secondary thoroughfares can handle 49,200 vehicles. This provides an increase of 61.5 per cent above the present volume of movement, during the maximum hour, which should accommodate all traffic that can reasonably be anticipated at this time.

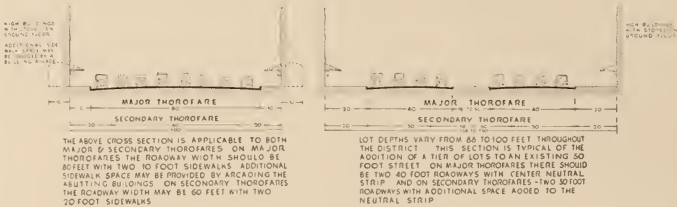
STREET CROSS-SECTIONS

LOWER EAST SIDE
PLANNING ASSOCIATION

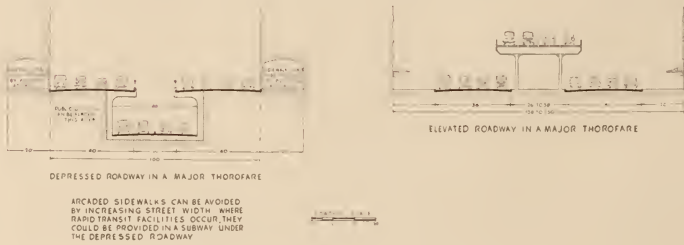
LOWER EAST SIDE
NEW YORK CITY

BARTHOLOMEW & ASSOCIATES
CITY PLAN LANDSCAPE ENGINEERS
SAINT LOUIS MISSOURI

MAJOR & SECONDARY THOROFARES AT GRADE



MAJOR THOROFARES CONTAINING DEPRESSED OR ELEVATED ROADWAYS



EAST RIVER WATER FRONT



STREET CROSS-SECTIONS

Plate Number Twelve

The fundamental purpose of street space is to provide adequate traffic circulation and convenient access to the abutting property. This implies not only access for vehicular movement but also for pedestrian movement.

The roadway design should be predicated upon the known requirements of moving traffic which is to be accommodated and not based on any arbitrary standards. The roadway width should, where two-way movement is to be anticipated, always provide for an even number of lanes. The unit or lane width should be 10 feet. Street cars and buses will also require a lane width of 10 feet. The lane next to the curb which is usually absorbed either by waiting or parked automobiles should be not less than 8 feet or more than 10 feet in width.

All major or secondary traffic thoroughfares should have a width of 8 lanes in this district. This is generally reduced by two lanes because of standing or parked cars at the curb on each side of the street, which leaves an effective roadway sufficient to carry 6 moving lanes of traffic, three in each direction. Only in the case of one-way streets should this width be decreased.

Sidewalk space should be ample but not unnecessarily wide. It should be related to the uses of adjoining property and consequent probable future pedestrian movement.

Plate No. 12 was prepared to show the detailed recommendations for sidewalk and vehicular roadway space on typical street cross-sections. Examples of treatment at grade, on elevated and depressed structures, and finally the suggestions for the improvement of the East River Drive for both park and secondary traffic use, are shown on this illustration (Plate No. 12).

The minimum over-all width for any 8-lane vehicular thoroughfare is 100 feet. The roadway should be 80 feet in the case of through routes, but may be reduced to 60 feet for secondary thoroughfares. This leaves but 10 feet for the sidewalks on each side of the major thoroughfares. The desirable sidewalk width is assumed to be 20 feet, although this will vary according to whatever may be the character and use of abutting property. This 100-foot section is shown, since it is typical of many of the avenues north of East Houston Street and also Chrystie Street from Canal to East Hous-

ton. Wherever necessary, insufficient sidewalk space can be overcome by the partial arcading of the store frontages.

In the widening of streets in the Lower East Side it is possible that acquisition of the entire tier of lots fronting on one side of the street can be secured without much greater cost than would be required for a lesser acquisition needed to merely secure a width of 100 feet. Allen Street from Stanton to Canal Streets is an example of such a procedure. The tier of lots on the east side of Allen Street is approximately 88 feet deep. Adding the full lot depth to the present street width gives an over-all width of 138 feet. In order to make this specific example of Allen Street generally applicable throughout the district the new section was assumed to vary from 138 to 150 feet, since lots are 100 feet deep in most instances. Such a width lends itself to the development of two one-way roadways—40 feet wide separated by a neutral strip, and two sidewalks 20 feet wide. The difference in width is taken up in the neutral strip which for the section studied (138 to 150 feet) will be between 18 and 30 feet wide.

The traffic problem of Manhattan can not be solved entirely by the use of single-level streets. Congestion now occurs at most street intersections. This congestion can be completely eliminated only by the separation of grades. It is problematical as to where and how often such treatment can be justified economically, but typical cross-sections are shown for consideration in particular instances. Two proposals, one for an elevated roadway and the other for a vehicular subway structure, are shown on Plate No. 12.

Elevated Roadways

Any elevated highway structure should be placed on a street which is sufficiently wide to remove all detrimental effects upon abutting structures. It is believed that a width of 138 to 150 feet is sufficient to accomplish this. The elevated structure should provide for a four-lane roadway (two lanes in each direction) with connections to the street level only at or near major intersecting streets. If such a structure were placed on Allen Street and First Avenue to serve as an express highway, direct connections could be made to the upper decks of the Manhattan

Bridge. The center space under the elevated should be left open, or if necessary used for subway entrances and exits. The greater width of 150 feet is to be preferred where an elevated structure is to be anticipated. The structure need not be of steel as are the present Second and Third Avenue elevated railways, but can be of reinforced concrete. This latter type lends itself to ornamental treatment and also materially deadens noise. The elimination of the factor of noise and unsightly structures plus the admission of light to roadways and sidewalks will to a great extent reduce the present objections to elevated construction. In addition to the elevated roadways, two surface roadways of 36 feet each and two sidewalks of 20 feet each are contemplated.

Depressed Roadways

A rapid transit subway and a depressed roadway for vehicles can be placed in a 100-foot street cross-section if the sidewalks are arcaded. The possible division of a typical 100-foot section with two surface roadways of 40 feet and a depressed roadway of 40 feet is shown on this plan. If such a treatment is carried through and it later becomes necessary to provide for rapid transit facilities in the same street, a subway could then be built on a third level below the depressed vehicular thoroughfare. There would be added economy if rapid transit facilities and express depressed vehicular roadways were constructed simultaneously. Connections to any depressed thoroughfare should be provided at or near intersecting major highways only. The continuity of all intersecting streets will be uninterrupted, since these can be carried through at grade as at present.

East River Drive

The area adjacent to the East River is susceptible to several treatments, to wit:

1. Area between River and apartment buildings can be reserved entirely for park use.
2. Area between River and apartment buildings can be reserved partially for park use and a secondary thoroughfare provided for vehicular movement.
3. Area immediately adjacent to river can be used for commercial and industrial uses (this is the condition of most of the waterfront today) and a buffer park created between a major thoroughfare (which will be sufficiently wide to accommodate local traffic and such commercial traffic as may be required by the commercial and industrial property) and the dwellings.

The first of these is the most desirable solution from the standpoint of complete dwelling use of the Lower East Side, but present circumstances will prevent its immediate accomplishment.

It is recommended that a park strip and a secondary thoroughfare be created adjacent to the East River in the first instance. This thoroughfare should not be made so direct as to attract any great volume of foreign traffic but should be conceived as a secondary thoroughfare with sufficient pavement width to care for local and commercial traffic. One roadway of 110 feet should be sufficient. When and if, at a later date, it is found more desirable to convert the entire area into park space, this can be done without great cost by removing the roadway.

PART THREE
SPECIAL INVESTIGATION OF
REAL ESTATE CONDITIONS



LEGEND
 City Property - Churches
 City Property
 Churches, Synagogues, Hospitals, Institutions, State Property
 State Housing Projects
 City Owned Property Not Tax Exempt
 Dilapidated Structures

NOTE: THE TOTAL BLOCK AREA IS 5793 ACRES; THE PROPERTIES
 CONTAINED ON THIS PLAN HAVE AN AREA OF 155.5 ACRES OR
 2.70 PERCENT OF THE TOTAL BLOCK AREA.
 VALUE OF TAX EXEMPT PROPERTY: \$118,400,000
 VALUE OF OTHER TAXABLE PROPERTY: \$1,181,000,000
 TOTAL VALUE OF ALL TAXABLE PROPERTY: \$1,299,400,000
 THE PERCENT OF ALL TAX EXEMPT PROPERTY IS 9.11 PERCENT OF THE TOTAL VALUE OF \$1,299,400,000

TAX EXEMPT PROPERTY
 AS OF ASSESSMENT RECORD FOR 1931

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
 CITY PLAN & LANDSCAPE ARCHITECTS
 5 AINT. LOUIS - MISSOURI

TAX EXEMPT PROPERTY

Plate Number Thirteen

An appreciable part of the Lower East Side is tax exempt. There are 133.3 acres of the total block area (579.4 acres) that are not subject to city taxation. This study was prepared from the 1931 assessment records, as published in the "City Record—Volume LIX." For the purpose of this investigation all of the tax exempt property excluding street space was divided into three general classifications: (1) city-owned property, (2) institutional property, and (3) state housing projects. The total tax exempt area of 133.3 acres is divided between the several classifications, as follows:

Table No. 8

TAX EXEMPT PROPERTY * LOWER EAST SIDE, NEW YORK CITY (As of 1931 Assessment Record)		
Item	Square Feet	Acres
1. City property	4,200,073	97.5
2. City property (not included as tax exempt)	323,679	7.4
3. Church—synagogue—etc.	1,159,712	26.6
4. State housing board projects †	80,600	1.8
A. Total area	5,813,464	133.3
B. Per cent of total block area		23.0
C. Total value all exemptions	\$58,403,610	
D. Average value exempted property	\$10.05 per square ft.	

* Note: Does not include pier or bulkhead exemptions.

† Note: Building value exempt; land value taxed.

The city-owned property has been grouped into four sub-classifications, as shown on the legend accompanying Plate No. 13. The first of these are the areas used for schools, of which there are 37. These are fairly well distributed to care for the educational needs of the district. The decrease in population has reduced the school requirements so that several school sites are now being considered for abandonment. Because of the age and obsolescent character of many of the existing buildings, some plan for their replacement simultaneously with the reconstruction of the area should be considered. A few examples of the older

structures are P. S. No. 13 which was erected in 1833; P. S. No. 161 in 1843, and P. S. No. 15 in 1838 with additions in 1855 and 1904. Detailed recommendations concerning the school system, however, represent another phase of the city plan which is beyond the scope of the present report.

The second type of city-owned property is the area used for fire and police stations, parks and playgrounds, piers, bridge plazas and the like. It is not distributed uniformly over the district as are the school properties. The principal holdings in this group are the few small park areas, lands under and adjacent to the Williamsburg and Manhattan Bridges, and areas acquired in connection with the construction of the 8th Avenue route along Essex and Houston Streets.

A special third type of city holding consists of the Chrystie-Forsyth area between Canal and Houston Streets, which is shown as city property although it is not tax exempt. Also included in this third classification are small areas at the intersection of Schiff Parkway and Eldridge Street; at the intersection of South and Clinton Streets; and in the block between Gouverneur—Monroe—Montgomery—Cherry Streets.

Institutional property occupies a considerable amount of land. It includes churches, synagogues, missions, settlement houses and other similar uses and is shown on Plate No. 13 by a separate indication. It is widely scattered over the district and is found in nearly every block except in the industrial areas adjacent to the East River and in the area bounded by Schiff Parkway—East Broadway—Forsyth and Essex Street.

The three state housing board projects on which the value of the building is tax exempt for twenty years, are located on Grand, on Stanton and on East 3rd Streets. The area occupied is insignificant.

This study is of value particularly with respect to any housing studies, in aiding in the selection of the most logical unit or units for initial development. To a certain degree it emphasizes the conditions which will be encountered in assembling land for reconstruction; also the location and character of public and semi-public lands and buildings, some of which are more or less permanent in character and others of which can be abandoned or relocated; but all of which are of significance in any reconstruction program.



PRIVATE PROPERTY NOT MORTGAGED

Plate Number Fourteen

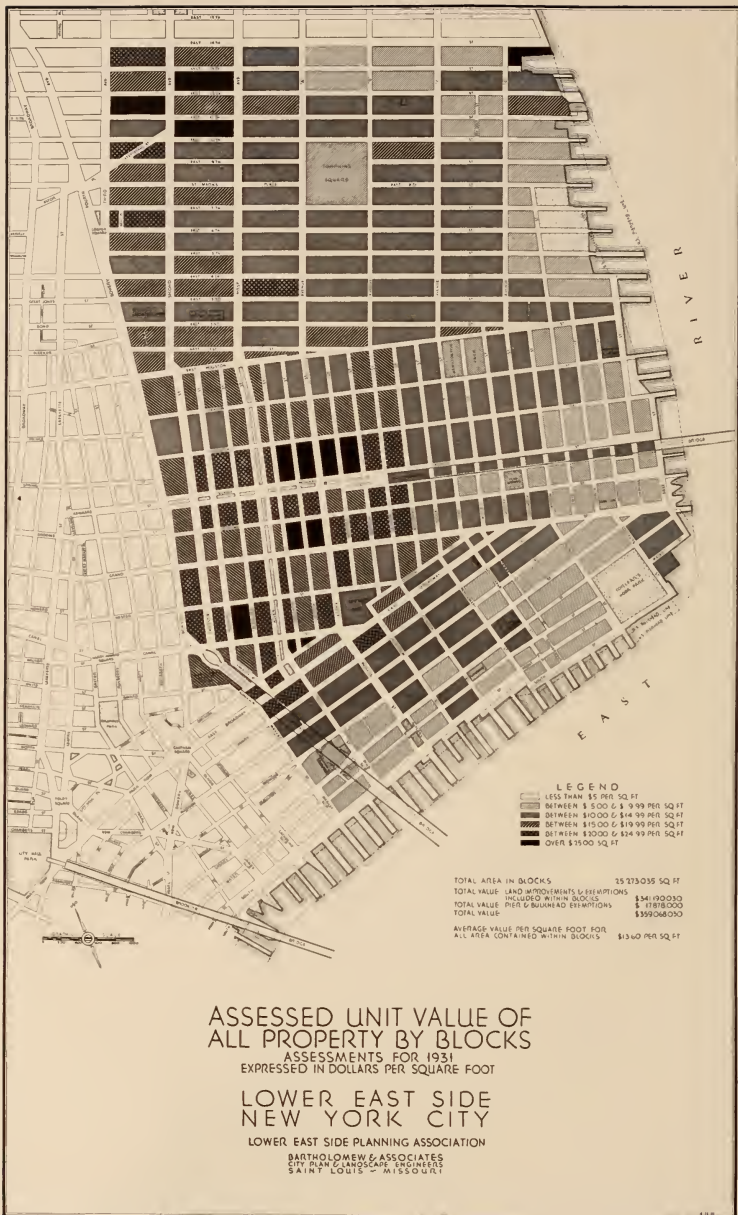
All of the unmortgaged private property as of November 15, 1931, within the Lower East Side is shown in Plate No. 14. This does not include any of the city property indicated on the previous plate, but does include several of the unmortgaged institutional holdings, which are tax exempt.

Individual and estate holdings have a material effect upon the ease or difficulty which must be anticipated in assembling land for unit development. The data contained on this plate was plotted from an investigation by Mr. Joseph

Platzker, Secretary of the East Side Chamber of Commerce.

The unmortgaged holdings are scattered over the entire area. There are but two blocks in the southeastern and one block in the northeastern section of the district, which are free of mortgages. The major portion of the area is now carrying a mortgage of some sort. There is a total of 57.2 acres of private property not mortgaged. This is 9.9 per cent of the total block area of 579.4 acres.

This plate was prepared because of its obvious relation to the problem of land assembly.



ASSESSED UNIT VALUE OF ALL PROPERTY BY BLOCKS EXPRESSED IN DOLLARS PER SQUARE FOOT

Plate Number Fifteen

The 1931 assessed valuation of all property in each block expressed in dollars per square foot is shown on Plate No. 15.

These calculations are based on the total value of both the land and improvements in each block and are inclusive of all tax exempt property. The average value based upon such a unit value per square foot presents as reasonable a criterion of the probable purchase value as can be obtained without actual canvass and option agreements. Due to the present inactivity of the real estate market generally, and in this district in particular, it is exceedingly difficult to establish a basis for determining true value.

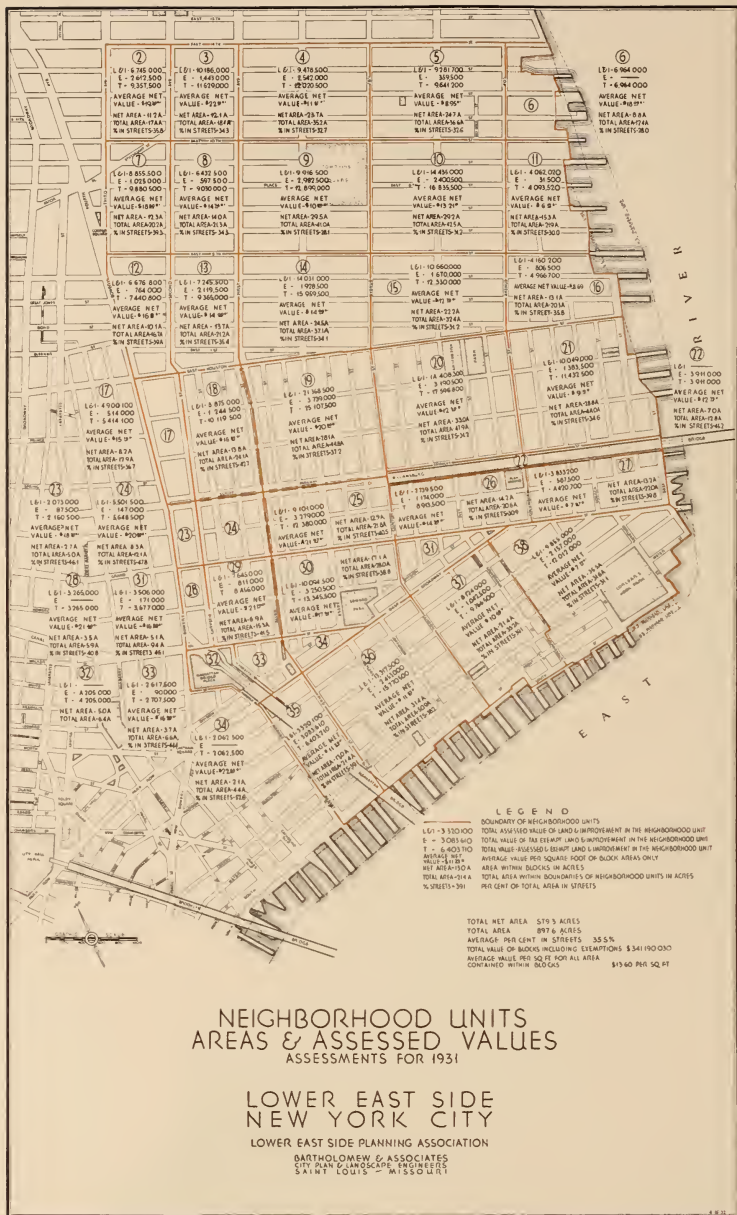
These values are by no means uniform over the district but vary from a maximum of \$40.96 per square foot to a minimum of \$2.69 per square foot. The maximum values are found in the areas abutting on the Bowery-Schiff Parkway-Fourth-Third and Second Avenues and on a few other streets now used as main thoroughfares. In general these values gradually decrease as the East River is approached.

Because of increasing obsolescence, it seems logical to predict that assessed values must be subject to some downward revision in the near future. An adjustment of the assessed value to actual earning value will have to be made sooner or later for the entire district. This must be considered not only for the sections that are reconstructed but also should be made to apply equally to all of the area.

Since only a limited amount of this or any other similar area can be devoted exclusively to business use with reasonable profit, and since all of the studies suggest extensive multiple-dwelling development as the most logical type of improvement for the greater part of the Lower East Side, the question naturally arises as to what

bearing unit land values may have upon the prospects for encouraging such multiple-dwelling use. This illustration (Plate No. 15) was prepared to aid such consideration. No attempt will be made to discuss the relation of land value to housing costs since that is a subject which will require extensive research. For housing of the type discussed in Part Five, a change in land value of \$1.00 per square foot would affect monthly room rentals from 25 to 50 cents. Since a normal average land value in large areas of the East Side, as disclosed by the plate, is about \$13.60 per square foot, from \$3.00 to \$6.00 of monthly room rental would be directly chargeable to land cost. Obviously, these figures are high if only the lowest cost housing is under consideration, but this factor of land cost becomes less and less significant as housing for groups of people in the successive higher income brackets are considered.

Whatever the type of housing that may be built on the Lower East Side, the creation of some permanent, well constructed buildings will help to stabilize values and assure a fixed income to the city. New York City, particularly the Borough of Manhattan, has suffered from considerable decentralization of population. Such a condition should not be permitted to continue indefinitely, as there are areas on Manhattan Island that are well adapted to some form of multiple-family dwelling use. The entire island cannot be absorbed for commercial and industrial use. These areas, of which the Lower East Side is one, must be reconstructed in large, well planned units, however, before they can be expected to attract large numbers of people. Such reconstruction in addition to assuring the most economical use of the land also would eliminate much of the slum area within which social conditions are not conducive to healthful living or to good citizenship.



NEIGHBORHOOD UNITS—AREAS AND ASSESSED VALUES

Plate Number Sixteen

Any logical plan of major traffic thoroughfares divides a district into areas of varying size having certain common characteristics which frequently might be considered as a self-contained neighborhood. The Lower East Side is divided into unit areas by the major and secondary thoroughfares shown on Plate No. 10. The same areas have been indicated on the accompanying plate. The net block area, area of streets, per cent of total area devoted to street space, total area in each unit, 1931 assessed values of land and improvements, value of tax-exempt property, and total value including tax-exempt property, as well as the value per square foot based on total assessed values, are all shown on Plate No. 16.

Such a study is a valuable prerequisite to any housing investigation, since the values of land and the probable size of the areas for unit development must be considered and compared.

These units vary in size from 4.4 acres to 51.6

acres. Quite a number average around 30 acres. Total valuations for the units are between the limits of \$2,062,500 and \$25,107,500. Unit land values per square foot vary from a maximum of \$22.62 to a minimum of \$6.12 per square foot, with the highest unit values generally concentrated in the west part of the area (about \$20.00 per square foot) and the lower values (between \$8.00 and \$10.00 per square foot) adjacent to the East River.

The larger units need not be completely developed at one time but can be made by successive stages, providing that each portion is fully coordinated with the other parts. In the plan presented for reconstruction, the housing units are so designed as to make this possible.

Some of the units, particularly in the areas west of Allen Street from Houston Street to East Broadway, can probably be developed for business rather than as neighborhood unit dwelling areas.

PART FOUR
TRANSIT PLAN

BRIEF HISTORY OF TRANSIT DEVELOPMENT

Transit facilities are always an important factor in the development of any area. A brief review of the growth, extension, changes and abandonment of both surface and rapid transit facilities on the Lower East Side follows.

Surface Lines

The stage coach provided the first means of transportation in New York City. "Departing at stated and infrequent intervals, and with much fanfare of horns they ran from the taverns on the lower part of the island, over the old Boston Post Road and Bloomingdale Road (now Broadway) to the little embowered hamlets on the north".* These vehicles rapidly increased in numbers and induced considerable congestion on Lower Broadway.

The New York and Harlem Street Railway was chartered in 1831 and began operation of a horse car line on the Bowery and Fourth Avenue from Prince Street to the Harlem Bridge in 1832. Steam power was later tried but abandoned due to the number of accidents, and the horse car was reinstated.

From this modest beginning the mileage of horse-drawn street car routes was rapidly extended along nearly all north and south avenues and across town at many points. In 1869 there were 18 operating companies in the City with track on the Lower East Side on Fourth Avenue, Bowery, East 14th, East 8th, Grand, Canal, East Broadway, South Streets and on Third Avenue, Second Avenue, Allen, Chrystie, Columbia, Essex, Clinton, and Lewis Streets.† These private street railway routes were supplemented by 6 city-owned omnibus lines, 2 of which served the Lower East Side.

The street railway lines continued to extend their lines rapidly over many streets of the Lower East Side. In recent years, however, many miles of track have been abandoned and removed. In addition to the present track layout, the following streets at one time or another were used by Street Railways:

1. East 14th Street from Avenue "B" to East River.

2. East 3rd Street from First Avenue to Avenue "C".
3. East 2nd Street from Avenue "A" to East River.
4. East Houston Street from Bowery to East River.
5. East Stanton Street from Bowery to Pitt Street.
6. Delancey Street from Clinton Street to East River.
7. Canal Street from Bowery to East Broadway.
8. South Street from Brooklyn Bridge to Carlears Street.
9. Water Street from Montgomery to Jackson.
10. Monroe Street from Jackson to Grand.
11. Olive Street from Chatham Square to South Street.
12. Montgomery Street from South to Monroe.
13. Jackson Street from South to Monroe.
14. Corlears Street from South to Grand.
15. Avenue "C"-Pitt Street from Stanton to East 14th.
16. Avenue "D"-Columbia from Grand to East 14th.
17. Cannon Street from Grand to Houston.
18. Lewis Street from Grand to Houston.
19. Goerck Street from Grand to Houston.
20. Mangin Street from Grand to Houston.
21. East Street from Grand to Rivington.

The horse cars were supplanted by cable cars with underground slots. These first appeared on Manhattan Island on 125th Street and on Amsterdam Avenue in 1885. Electrification was delayed due to certain prejudice felt against it in spite of the success of its use in other cities. Electric trolleys with the wire in underground slots were introduced on 116th Street in 1893. The surface car connections to Brooklyn over the three lower bridges were first introduced by a cable car connection across the Brooklyn Bridge in 1883. These were superseded by the routing of the Brooklyn surface cars across the Bridge in 1896. On the Williamsburg Bridge surface-car crossing was established in 1906; on the Manhattan Bridge in 1912 and discontinued in 1931.

*King's Handbook of New York City—1892.

†Manual of Corporation of City of New York—1869.

Rapid Transit

Elevated Railways

A movement for elevated railways, as the solution of New York's transit problem, grew very strong in 1866. An experimental track from the Battery to Cortlandt Street along Greenwich Street was commenced in 1867. The first means of locomotion was a wire rope drawn by a stationary engine. This company failed and in 1870 small locomotives were introduced operating between the Battery and 29th Street; to 34th Street in 1873; to 42nd Street in 1875; and to 61st Street in 1876.

On the Lower East Side the Third Avenue Elevated Railway was opened between South Ferry and 42nd Street on August 26, 1878; through service from South Ferry to Bronx Park, and from City Hall to 177th Street was initiated on September 24, 1896. The 34th Street Branch was opened on July 1st, 1880, and closed permanently and ordered removed on July 14th, 1930. The 42nd Street Branch was opened on August 26th, 1878, and closed on December 6th, 1923.

The Second Avenue "L" was opened between South Ferry and 65th Street on March 1st, 1880; to 129th Street on May 17, 1886.

The elevated railways were rapidly extended into many sections of Brooklyn between 1880 and 1890. Connection to Manhattan was made via the cable cars across the Brooklyn Bridge and by ferries. The elevated lines did not operate across this bridge until 1898. Service across the Williamsburg Bridge was initiated in 1908; and across the Manhattan Bridge in 1915.

Subways

Between 1880, when the original elevated lines were completed, and 1904, when the first subway was opened, rapid transit construction was practically at a standstill. The first subway contract was awarded on January 15, 1900, and work was begun on March 24th at the City Hall. It was opened for operation in 1904 between the Brooklyn Bridge and 145th Street via Park Row, Elm, Centre, Fourth Avenue—42nd Street and Broadway and extended via the Harlem River Tunnel into the Bronx in 1905. The South Ferry extension was opened in 1905, while the Broadway extension to 242nd Street was completed in 1908. The original East River Tunnel with connection via Borough Hall to Atlantic Avenue (Brooklyn) was opened in 1908.

The further extension of subway facilities took place between 1914 and 1921. New York subway construction took place in three distinct periods: from 1904 to 1908; from 1914 to 1921 and from

1929 to 1932. In the first period 100 miles were built, in the second 260 miles, while the City has just about completed a separate system which may or may not be operated by either the I.R.T. or B.M.T.

The Lower East Side is at present well supplied with transit facilities, and their arrangement under existing conditions is fairly satisfactory. Practically all of the area is now within $\frac{1}{4}$ mile of either a surface street car or bus line, and within $\frac{1}{2}$ mile of a rapid transit station if those now under construction on the Eighth Avenue line are included.

Existing transit lines connect more or less directly with other New York City areas which it is important to reach easily and quickly. These areas may, for the most part, be reached by paying a single fare.

Subway, Elevated and Surface Transit Lines Which Connect the Lower East Side with Other Parts of the City

Adequate transit facilities (both rapid and local) are essential in rebuilding the Lower East Side. First in assuring direct and easy communication between the district and other parts of the city and second in furnishing good circulation within the district itself.

Rapid Transit Facilities

Rapid transit facilities are of first importance in the former respect. The area served by the I.R.T., B.M.T. and City Lines includes all of Manhattan, a great part of both Brooklyn and the Bronx and portions of the Borough of Queens; thus, a large proportion of the City of New York is directly accessible for a single fare from some point within or immediately adjacent to the Lower East Side. Under present conditions many people from the other boroughs avail themselves of the opportunity to shop in the low-price market afforded in the district.

Lines now in operation entering Manhattan through the Lower East Side include the 14th Street—Canarsie in East 14th Street; the Canarsie, Jamaica and Myrtle Avenue lines in Schiff Parkway; the Sea Beach, West End, Culver and Brighton Beach lines in Canal Street. The Lexington—Jerome Avenue (I.R.T.) line is in Lafayette Street and Fourth Avenue just west of the district.

The Eighth Avenue subway now being built by the city passes through the district along East Houston, Essex, and Rutgers Streets. This new Eighth Avenue line traverses Manhattan Island

on the West Side, extends north into the Bronx and south into the West Flatbush section of Brooklyn, and via Fulton Street to Queens. A cross connection between Brooklyn and Queens is being built parallel to the East River.

Three additional routes proposed in the second step of the Board of Transportation's comprehensive rapid transit plan will pass through the Lower East Side; one along the New Bowery, Chrystie, and Second Avenue; another along Worth Street, East Broadway, and Grand Street; and the third extending eastward in East Houston Street from Avenue "A".

An additional fare is now necessary in transferring between the B.M.T. and the I.R.T. subway systems. The policy governing possible transfer between the City System and the B.M.T. and I.R.T. is contingent upon the selection of a managing and operating company.

When the Eighth Avenue subway line is placed in operation the area between the Manhattan Bridge, the Bowery, Houston Street, and Essex Street will have a remarkable concentration of rapid transit facilities, equaled by no other secondary business area in New York City.

It is convenient to the I.R.T. East Side-Lexington and Jerome Avenue subway and the B.M.T. Fourth Avenue-Broadway lines, while the B.M.T. lines that cross the East River on the Manhattan and Williamsburg Bridges pass directly through it. The New Eighth Avenue city subway is on the east and north boundaries.

The ultimate abandonment and removal of the Second and Third Avenue elevated lines will probably require quite a number of years. They would be replaced by the more desirable subway in Second Avenue, which from all available information appears to be the most probable initial project in the second step of the rapid transit plan. A high degree of accessibility of rapid transit to and from the Lower East Side to other parts of the city seems to be permanently assured.

There is a lack of sufficient cross-town rapid transit facilities at present in Manhattan south of

14th Street. This is detrimental to the best interests of the Lower East Side. It is fortunate, therefore, that the new Eighth Avenue line on Houston Street partially supplies this need. Recommendations for additional cross-town service by rapid transit and local surface facilities are contained in the discussion of the Ultimate Comprehensive Transit Plan (Plate No. 20).

Surface Transit Facilities

A listing and a detailed discussion of the operating characteristics of surface street cars and bus lines, are given in the discussion of Plate No. 18.

The Manhattan lines afford limited local service to downtown and uptown Manhattan and to a greater extent across town to areas on the west side of the Island.

Two of the Brooklyn lines, the Grand Street-Brooklyn and Post Office-Brooklyn, operated until January 1932 across the Williamsburg Bridge. Four other Brooklyn lines, the Ralph-Rockaway, Reid, Nostrand and Tompkins Avenue, cross the bridge and terminate in an underground station at Schiff Parkway and Clinton Street. These lines afford local service to a wide territory in Brooklyn, extending from Nostrand Avenue on the west to Rockaway Parkway on the east and southward to Canarsie Depot at Hegeman Avenue and to Flatbush Avenue at Glenwood Road.

There are eleven other Brooklyn street car lines which cross the Brooklyn Bridge and terminate at Park Row. These are directly accessible from the lower or southern portion of the Lower East Side. These lines are the Graham Avenue, Flushing Avenue, Court Street, Greene and Gates Avenue, Putnam Avenue, Flatbush Avenue, Bergen Street, Park Row-Crosstowu, DeKalb Avenue, Myrtle Avenue, and Smith Street.

East of Flatbush Avenue these lines provide service in an east-west direction over a wide area in the north and east parts of Brooklyn. In addition, three of them serve the area between Prospect Park and the Upper Bay and two extend northeast from the bridge to Long Island City.

ADEQUACY OF RAPID TRANSIT FACILITIES

Plate Number Seventeen

The rapid transit facilities within and adjacent to the district shown on Plate No. 17 consist of:

- (a) Existing subway lines and stations.
- (b) Existing elevated railway lines and stations.
- (c) Subway lines and stations under construction.
- (d) Subway lines proposed under second step in rapid transit development.

Existing Subway Lines and Stations

B.M.T.—14th Street—Eastern

This line is located in East 14th Street along the northern boundary of the district. It extends eastward under the East River to a connection with the Myrtle Avenue line and thence to Canarsie in Brooklyn; on the west it extends to Sixth Avenue in Manhattan. A connection to Eighth Avenue is now being made. Stations serving the Lower East Side are located at East 14th and First Avenue, East 14th and Third Avenue and a free transfer station with the Broadway—B.M.T. lines at Union Square. The line, therefore, affords service from the northeast part of Brooklyn to the district and by free transfer at Union Square to the Wall Street and 42nd Street centers via the B.M.T. Broadway subway.

B.M.T. Broadway and Brooklyn Elevated Route

This route enters the Lower East Side across the Williamsburg Bridge from Brooklyn. The Jamaica, Canarsie and Ridgewood lines use it. It passes through the district in a subway via Schiff Parkway and turns southward down Centre Street to Chambers Street. Stations located within the district are at Essex Street with entrances at Essex and Suffolk Streets, and the Bowery with entrances each side of the Bowery on Schiff Parkway and Kenmare Street. The Canal and Chambers Street Stations are immediately west of the district. This line provides a direct elevated route from the Bridge Plaza in Brooklyn to the Broadway and Canarsie sections of Brooklyn and the Jamaica and Liberty Avenues sections of Queens. Free transfer to the 34th, 42nd and Wall Street sections of Manhattan is provided at Canal Street.

B.M.T. Manhattan Bridge Route

The route crosses the Manhattan Bridge from

Brooklyn and then follows Canal Street and turns north on Broadway to 57th Street, Manhattan, and Queens Plaza, Queens. Free transfer for the Broadway (Brooklyn) and Wall Street centers are provided at Canal Street. Lines using this route are the West End, Brighton Beach, Culver Line, and the Sea Beach Express lines.* There are no stations within the district itself, the Canal Street station with entrances at Centre and Lafayette is within a few minutes' walk of a considerable area in the southwestern part of the district.

Service is provided directly between the Lower East Side and all of the south and west parts of Brooklyn and also the 14th, 23rd, 34th, and 42nd uptown centers. Service to downtown Manhattan—Wall Street—is provided by free transfer at 14th and Canal Streets.

B.M.T. Broadway Subway

This route is located in Broadway and is an integral part of the Canal Street—Williamsburg Bridge Route. The express service on the West End, Sea Beach and Brighton lines go through the district, whereas the local lines continue south on Broadway, Church and Trinity Place, to the Wall Street area and thence through the tunnel to Brooklyn. It is sufficiently close to be within a few minutes' walk of the western part of the area. The stations at Union Square, Eighth Street, Prince Street, and Canal Street beyond doubt are used to some extent by passengers to and from the district.

This route provides service from Queens Plaza, Queens, and 57th Street, Manhattan, to all parts of the Island south of 57th Street and also directly to all central, western and southern parts of Brooklyn, serving Park Slope, Flatbush, Bayridge, Bath Beach, Coney Island and intermediate sections.

I.R.T. East Side Subway

This route (Lexington and Jerome Avenues) does not pass through the Lower East Side but is

*The Brighton Beach and Fourth Avenue locals also stop at Canal Street but at a separate station, two blocks west of Lafayette and Canal. The Culver line also uses the Manhattan Bridge, Canal Street, but turns south on Centre Street with its first stop at Chambers Street.

located in Lafayette Street and Fourth Avenue just west of the district. The stations at 14th Street, Astor Place, Bleeker Street, Spring Street, and Canal Street are convenient to the westerly part of the district.

This route traverses the entire length of Manhattan Island with extensions north to Woodlawn, 180th Street, Bronx Parkway, Pelham Bay Parkway, Hunts Point and 242nd Street in the Bronx and via the East Side-Lexington Avenue tunnel to Atlantic Avenue, Brooklyn, where free transfer can be made to the other I.R.T. Brooklyn subway lines to New Lots Avenue and Flatbush Avenue.

Existing Elevated Railway Lines and Stations

Second Avenue Line

After entering the district from the north on First Avenue, this route extends southward on First Avenue, Allen Street, Division Street, and



EAST HOUSTON STREET WIDENING—WEST FROM
LUDLOW STREET

Park Row to City Hall and from Chatham Square via New Bowery and Pearl Street to South Ferry. Stations serving the district are located at East 14th Street, St. Marks Place, East First Street, Rivington Street, Grand Street, Canal Street, Chatham Square, Franklin Square and City Hall.

This elevated line affords service from South Ferry and City Hall to 125th Street and Bronx Park, to Astoria and Corona in Queens. Express service is provided alternately during rush hours to Freenian Street (Bronx) via subway and to Bronx Park via Third Avenue line. Express service to Astoria and Corona is operated from South

Ferry during rush hours and from City Hall during non-rush hours.

Third Avenue Line

This route is on Third Avenue and extends along the westerly border of the area on the Bowery, one branch via Park Row to City Hall and the other from Chatham Square via New Bowery and Pearl Street to South Ferry. Stations within or adjacent to the Lower East Side are located at East 14th Street, East Ninth Street,



WIDENING OF ESSEX STREET—NORTH FROM
SCHIFF PARKWAY

Houston Street, Grand Street, Canal Street, Chatham Square, City Hall and Franklin Square. The route also traverses the full length of Manhattan Island with connections via Second Avenue elevated and Lexington Avenue subway to 129th Street, Gun Hill Road and White Plains.

Brooklyn Bridge Lines

Five elevated railway lines from Brooklyn cross the Brooklyn Bridge and terminate at the City Hall Station at Park Row and Nassau Street. This station can be reached by a few minutes' walk from the southern part of the area.

These lines, including the free transfers possible at certain stations to other elevated lines and the B.-M.-T. subway system, provide service over a wide area in Brooklyn. The destinations of various lines are Stillwell Avenue, Metropolitan Avenue (Queens), Lefferts Avenue, Prospect Park, Wood Haven Boulevard, 168th (Queens) and 65th Street in Bay Ridge (Brooklyn).

Subway Lines and Stations Under Construction

The new Eighth Avenue subway located in East

Houston, Essex and Rutgers Streets when opened will provide service from 203rd Street in the Bronx to Ditmas Avenue and Rockaway Avenue in Brooklyn and Hillside and 168th Street, Queens, traversing the west part of Manhattan Island north of Houston Street and coming across town on Houston Street to Essex Street, thence to Brooklyn via the Rutgers-Jay Street tunnel. Other branches of this new subway are being constructed in Brooklyn and Queens, on Roebing, Fulton, and Queens Boulevard. Stations which will directly serve the area are being constructed on Rutgers between Canal and Madison, on Essex between Broome and Rivington, on Houston between First and Second Avenues, and on Houston between Mulberry and Broadway.

These stations where located at points of intersection with existing or proposed future subways will provide joint stations for both lines. They are well located to improve the rapid transit service for the district.

Subway Lines Proposed Under Second Step in Rapid Transit Development

The proposed subway lines included in the Board of Transportation's comprehensive plan as the second step in its development are as follows:
Second Avenue Subway

This route is proposed to extend from the Wall Street financial center northward on Pearl or Water Street, New Bowery, Chrystie Street, and Second Avenue to the northern end of Manhattan and into the Bronx connecting to the White Plains Road and Pelham Bay lines. It will pass through the entire westerly part of the Lower East Side. The route length in Manhattan will be 7.89 miles; there will be 37.52 miles of track; and the estimated cost is \$98,900,000. Station locations have not been determined but should probably be located at Chatham Square, Canal Street, Schiff Parkway, Houston, East 7th and 14th Streets.

Houston Street Line

This route will be an extension of that part of the Eighth Avenue subway in Houston Street eastward via a new tunnel to South 4th Street in Brooklyn. The part of the route in Manhattan will be 0.93 mile in length, containing 1.86 miles of track, and is estimated to cost \$7,900,000. Station locations are undetermined but there should be at least one and possibly two between Essex Street and the East River.

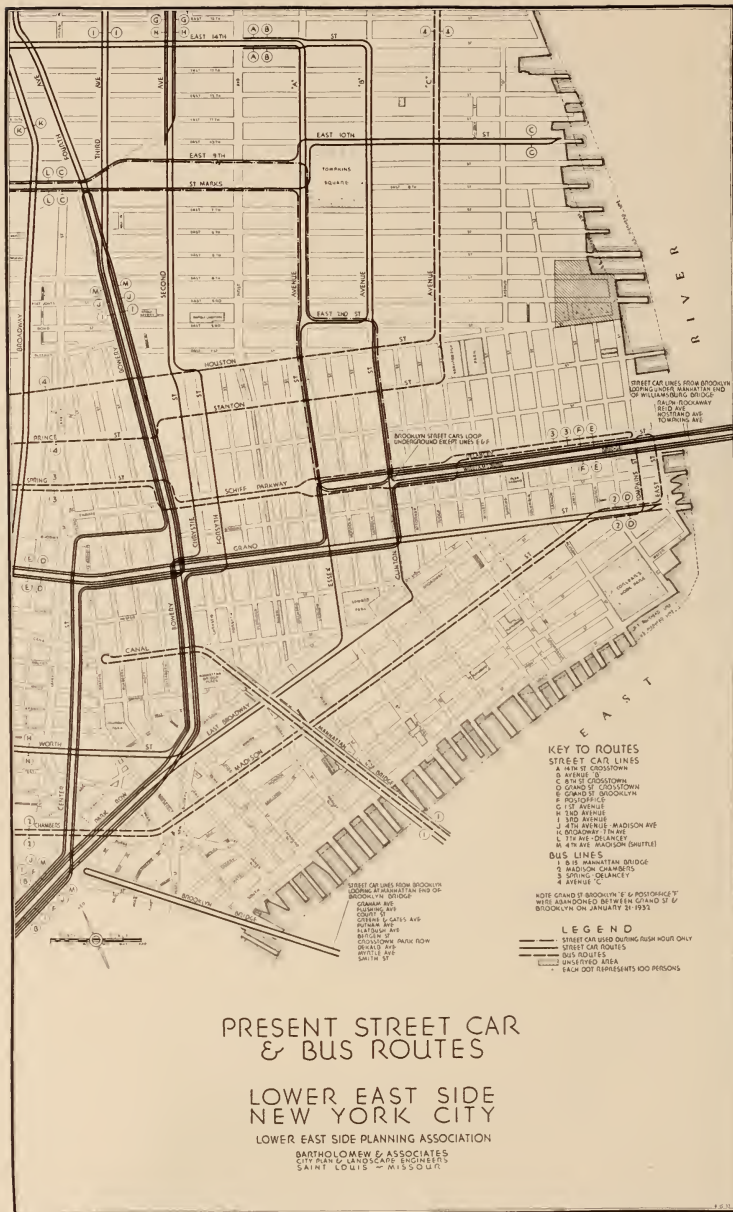
This, by connection to the Eighth Avenue line, will provide service to western Manhattan and the Bronx. In Brooklyn it is projected south on or in the vicinity of Utica Avenue to Flatbush Avenue. *Worth Street, East Broadway and Grand Street Line*

This route is proposed to extend from a connection with that part of the new Eighth Avenue subway in Church Street eastward in Worth, East Broadway, and Grand Street to the East River thence to Broadway (Brooklyn) via a tunnel. In Manhattan the route will be 1.95 miles long, contain 3.9 miles of track, and will cost \$13,300,000. Stations are not determined but should probably be located at Chatham Square, Rutgers, and East Grand and Columbia Streets.

This will be an alternate by-pass or loop connection to the East Houston Street route as well as affording access for the new city system to lower Manhattan. It will ultimately extend under the East River to a connection with the Utica Avenue route at Roebing Street, Brooklyn.

Except for the suggested Manhattan loop line the above existing rapid transit lines, lines under construction, and the lines included in the Board of Transportation's proposed second step of their comprehensive rapid transit plan, should provide adequate service for the Lower East Side.

All of the area and population that is further than 1/2 mile from a rapid transit station has been separately indicated on the accompanying plan (Plate No. 17).



PRESENT STREET CAR AND BUS ROUTES

Plate Number Eighteen

The surface transit lines serving the Lower East Side, both street car and bus, are shown on Plate No. 18. These lines afford direct service to many parts of New York City and, through connections with other lines, to other parts of New York City.

Local transit service is available within one-quarter mile, or a five-minute walk, from practically all parts of the district. These local surface lines are not all as direct as is desirable nor arranged to the best advantage for efficient service.

A brief description of the routing and operating characteristics of the various lines shown on the opposite plate follows:

STREET CARS

"A"—14th Street Crosstown

Route: From the ferry at the foot of West 23rd Street on 11th Avenue to 14th Street, thence east to Avenue "A," to Schiff Parkway, to Clinton Street, to Avenue "B," to 14th Street, thence to West 23rd Street ferry as above.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
E. at 3rd Avenue	5:50 to 6:30 p.m.	60	1 min.
<i>Passengers Carried 1930</i>			
Total Passengers	19,019,086		

Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated	Average Max. No. of Cars Per Day
3,303 min.	63	50

"B"—Avenue "B" Line

Route: From 14th Street and First Avenue on 14th Street to Avenue "B," to 2nd Street, to Essex Street, to Rutgers Street, to East Broadway, to Park Row, to Post Office Loop. Return route from Post Office to Park Row, to East Broadway, to Clinton Street, to Avenue "B," to 14th Street, to First Avenue.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
N. at Broome St.	5:00 to 6:00 p.m.	12	5 min.

Passengers Carried 1930

Total Passengers	2,828,971
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
2,430	30	28

"C"—8th Street Crosstown

Route: From Christopher Street ferry on West to Christopher, to Greenwich Avenue, to 8th Street, to Avenue "A," to 10th Street, to East River. Return from East River on 10th Street, to Avenue "A" to 9th Street, to Stuyvesant Street, to Fourth Avenue, to 8th Street, to Greenwich Avenue, to Christopher, to West Street, to ferry.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
E. at Astor Place	5:00 to 6:00 p.m.	16	45 sec.
<i>Passengers Carried 1930</i>			
Total Passengers	3,257,046		

Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
2,280	15	12

"D"—Grand Street Crosstown

Route: From Desbrosses Street ferry on Desbrosses to Greenwich, to Vestry, to Canal, to Sullivan, to Grand, to East River. Return same route.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
W. at Essex Street	7:30 to 8:30 a.m.	9	40 sec.

Passengers Carried 1930

*Total Passengers	1,327,568
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
1,360	19	16

*Includes Grand Street, Brooklyn, Line.

"G"—First Avenue Line

Route: From 125th Street and First Avenue on

First Avenue to 59th Street, to Second Avenue, to 10th Street. Return same route.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
S. below 10th St.	7:00 to 8:00 a.m.	13	37 sec.

Passengers Carried 1930

Total Passengers	5,181,209
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time
12.340	30

"H"—Second Avenue Line

Route: From 129th Street and Second Avenue on Second Avenue to Chrystie, to Grand Street, to Bowery, to Worth Street, to Broadway. Return from Broadway on Worth Street, to Bowery, to Grand, to Forsyth, to Houston, to Second Avenue, to 129th Street.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
N. below 10th St.	4:45 to 5:45 p.m.	15	4 min.

Note: 5:00 to 9:00 a.m. one car from 10th to Worth and Broadway—20 min. 9:00 a.m. to 6:00 p.m. two cars at 12 min. to Houston Street.

Passengers Carried 1930

Total Passengers	6,959,636
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time
15-150	36

"I"—Third Avenue Line

Route: 125th and Third Avenue on Third Avenue to Bowery, to Park Row, to Post Office Loop. Return same route.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
Post Office	7:20 to 8:20 a.m.	16	3 min. 45 sec.

Passengers Carried 1930

Total Passengers	26,731,559
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
12.260	97	86

"J"—Fourth Avenue—Madison Avenue

Route: 135th and Madison Avenue on Madison to 42nd Street, to Park Avenue, to Fourth Avenue, to Bowery, to Broome, to Centre, to Park Row, to Post Office Loop. On the return trip Grand Street is used in place of Broome Street, otherwise the route is the same as above.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
8th Street	4:51 to 5:51 p.m.	30	2 min.

Note: 3 cars 7:30 a.m. to 6:33 p.m. on 20 min. headway between Post Office and 8th Street (Shuttle).

Passengers Carried 1930

Total Passengers	14,820,644
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
(8.327) (to 8th St.)	75	60

"K"—Broadway—Seventh Avenue

Route: Seventh Avenue and 59th Street on Seventh Avenue to Broadway, to State, to South Ferry. Returning, the route is via Whitehall Street instead of State Street; otherwise it is the same as above.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
S. below 14th St.	5:30 to 6:30 p.m.	24	30 sec.

Passengers Carried 1930

Total Passengers	16,236,083
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Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
5.050	60	46

"L"—Seventh Avenue—Delancey Street

Route: Seventh Avenue and 59th Street on Seventh Avenue to Greenwich Avenue, to 8th Street, to Avenue "A," to Essex Street, to Delancey Street, to Clinton, to Avenue "B," to E. 2nd Street, to Avenue "A," to 9th Street, to Stuyvesant Place, to 8th Street, to Greenwich Avenue, to Seventh Avenue, to 59th Street.

Note: Operates to Lower East Side during rush hour only.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
N. at Astor Place	7:30 to 8:30 a.m.	30	2 min.

Passengers Carried 1930

Total Passengers 3,918,706

Route Length—Cars Operated

Length of Route	Max. No. of Cars Operated at One Time	Average Max. No. of Cars Per Day
4-363	48	33

BUSES

1. B-15—Manhattan Bridge

Route: Baxter and Canal to Fulton and Flatbush Avenue Extension, Brooklyn, via Manhattan Bridge.

Time Point—Max. Hour—Headway

Time Point	Max. Hour	No. Trips	Headway
Baxter and Canal	5:00 to 6:00 p.m.	13	4 min. 37 sec.

Passengers Carried 1930

Total Passengers 4,712,181

2. Madison and Chambers Streets

Route: From Delancey and East Streets on East to Grand, to Madison, to New Chambers, to Chambers, to West. Return from West to Chambers, to New Chambers, to Madison, to Grand, to Tompkins, to Delancey, to East Street.

Max. Hour—Headway

Max. Hour	Headway	No. of Trips
7:12 to 8:36 a.m.	1 min. 30 sec.	40

Passengers Carried 1930

Total passengers about 8,000,000

Buses Used

No. of Buses 32

3. Spring—Delancey Streets

Route: From Delancey and East Streets on Delancey, to Bowery, to Spring, to West Broadway, to Watt Street, to West, to Desbrosses Street Ferry. Returning same route. West bound buses use the north roadway on Schiff Parkway (Delancey Street) and east bound the south roadway to Pitt Street.

Max. Hour—Headway

Max. Hour	Headway	No. of Trips
7:30 to 8:30 a.m.	1 min. 30 sec.	40

Passengers Carried 1930

Total Passengers about 3,500,000

Buses Used

No. of Buses 20

4. Avenue "C"

Route: From First Avenue and E. 26th Street on First Avenue to East 24th Street, to Marginal Way, to Avenue "C," to E. Houston Street, to West Houston Street, to Washington Street, to Watt Street, to West Street, to Desbrosses Street Ferry. Return from Desbrosses Street Ferry to Watt Street, to Greenwich Street, to Charlton Street, to Prince Street, to Bowery, to Stanton Street, to Pitt Street, to Avenue "C," to Marginal Way, to E. 24th Street, to First Avenue, to E. 26th Street.

Max. Hour—Headway

Max. Hour	Headway	No. of Trips
6:30 to 9:00 a.m.	7 min. 30 sec.	8

Passengers Carried 1930

Total Passengers about 1,500,000

Buses Used

No. of Buses 10

STREET CAR LINES ON WILLIAMSBURG BRIDGE

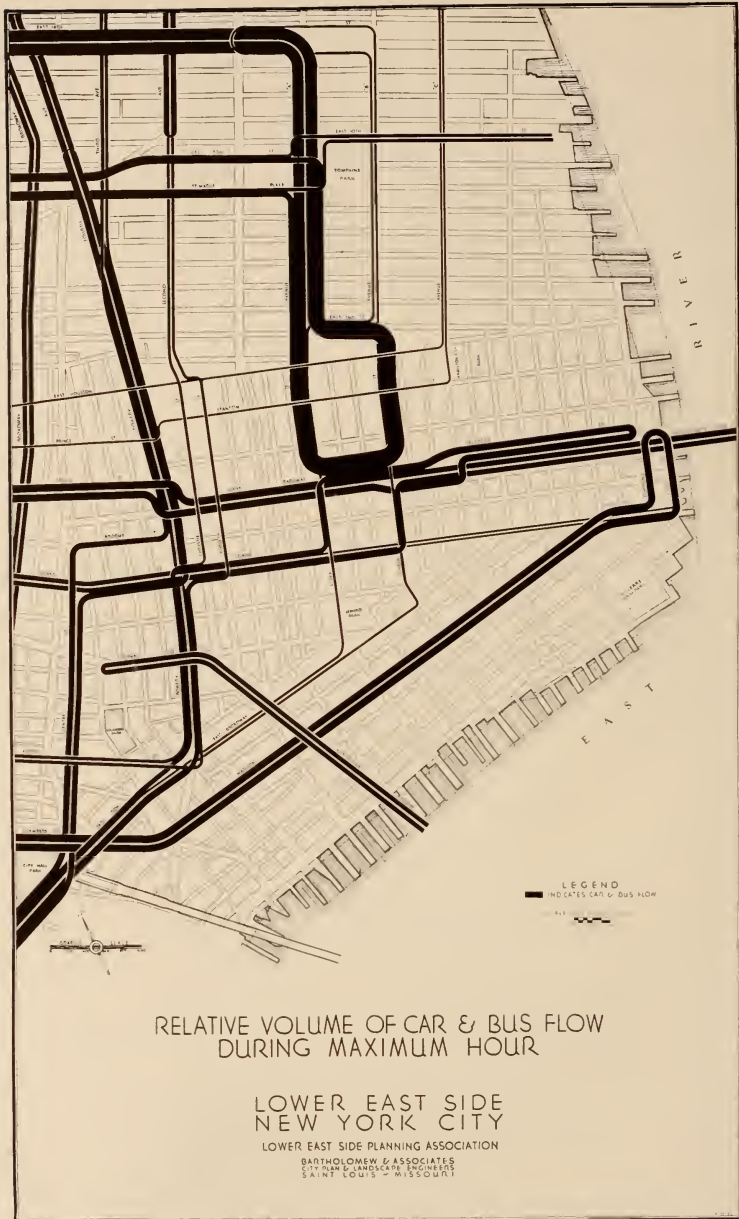
In addition to the foregoing lines which afford service principally within the Borough of Manhattan, there are four of the Brooklyn street car lines which cross the Williamsburg Bridge and terminate in the underground station at Schiff Parkway and Clinton Street. The lines include:

- Ralph-Rockaway
- Reid
- Nostrand
- Tompkins

STREET CAR LINES ON BROOKLYN BRIDGE

There are also eleven of the Brooklyn car lines which cross the Brooklyn Bridge and terminate at Park Row. They are:

- 1. Graham Avenue
- 2. Flushing Avenue
- 3. Court Street
- 4. Greene and Gates Avenue
- 5. Putnam Avenue
- 6. Flatbush Avenue
- 7. Bergen Street
- 8. Crosstown-Park Row
- 9. DeKalb Avenue
- 10. Myrtle Avenue
- 11. Smith Street



RELATIVE VOLUME OF CAR & BUS FLOW
DURING MAXIMUM HOUR

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION

BARTHOLOMEW & ASSOCIATES
CITY PLANNERS & LANDSCAPE ENGINEERS
SAINT LOUIS - MISSOURI

RELATIVE VOLUME OF CAR AND BUS FLOW DURING MAXIMUM HOUR

Plate Number Nineteen

The relative volume of street car and bus flow on each surface line during the maximum hour is of as much importance as the delineation of the present routing and area served. The opposite plate (Plate No. 19) was prepared from data assembled by the State Transit Commission and shows the maximum hourly car and bus flow on the various lines. This maximum hourly flow does not occur simultaneously on all lines but is found sometimes in the morning and in other instances during the evening rush hours. This plate shows the maximum volume of movement on each line irrespective of the time within which the flow occurred.

The high riding habit of patrons of the 14th Street Crosstown line is reflected in the volume of rush hour service on Avenue "A" between E. 2nd Street to St. Marks Place, the total number of cars operated at this point exceeding any other point in the district. Other lines affording frequent rush-hour service are the two bus lines operated by the Department of Plant and Structures, the Madison-Chambers and the Spring-Delancey lines.

Frequent service is provided on the Bowery where the four-track arrangement accommodates the Third Avenue and Fourth Avenue-Madison lines between East 4th Street and Broome Street. Although the Third Avenue line carries the greater number of passengers, the 4th Avenue-Madison

rush-hour service is the most frequent. The time and number of cars or buses scheduled during the maximum hour on each line are shown in the accompanying table.

Table No. 9

TIME OF OCCURRENCE AND MAXIMUM CAR OR BUS FLOW ON VARIOUS LINES

Lower East Side	New York City	No. Cars per Hour
Line	Time	
<i>I. Street Cars</i>		
A—14th St.-Crosstown	5:50 to 6:50 p.m.	60
B—Avenue "B"	5:00 to 6:00 p.m.	12
C—8th St.-Crosstown	5:00 to 6:00 p.m.	16
D—Grand St.-Crosstown	7:30 to 8:30 a.m.	9
E—Grand St.-Brooklyn	5:30 to 6:30 p.m.	17
F—Post Office-Brooklyn	8:00 to 9:00 a.m.	11
G—1st Avenue	7:00 to 8:00 a.m.	13
H—2nd Avenue	4:45 to 5:45 p.m.	15
I—3rd Avenue	7:20 to 8:20 a.m.	16
J—4th Avenue-Madison	4:51 to 5:51 p.m.	30
K—Broadway-7th Ave.	5:30 to 6:30 p.m.	24
L—7th Ave.-Delancey	7:30 to 8:30 a.m.	30
<i>II. Buses</i>		
1—Manhattan Bridge	7:00 to 6:00 p.m.	13
2—Madison-Chambers	7:12 to 8:12 p.m.	40
3—Spring-Delancey	7:30 to 8:30 a.m.	40
4—Avenue "C"	6:30 to 9:00 a.m.	8

PROPOSED COMPREHENSIVE TRANSIT PLAN

Plate Number Twenty

Subway construction has resulted in the widening of certain major streets, i.e., East Houston, Essex, and Rutgers Streets. Others have been widened for purposes of traffic relief, such as Chrystie, Forsyth and Allen Streets. It is, therefore, reasonable to anticipate that the transit facilities on these widened streets might be adjusted at an early date, whereas other parts of the plan must be held in abeyance until certain street widenings are realized.

Plate No. 20 shows the recommended arrangement of future surface transit facilities coordinated with the thoroughfare plan and ultimate rapid transit plan. It consists of rearrangements of existing street car and bus routes and the establishment of additional routes within and immediately adjacent to the district, designed to afford direct surface routes to the Wall Street and uptown business centers from all parts of the Lower East Side, and further to improve the local transit movement within the district itself.

The Second Avenue, Avenue "B," and East Eighth Street Crosstown street car lines have been approved by the Board of Transportation for abandonment; the service is to be replaced on these lines by buses. The Madison-Chambers and Spring-Delancey bus routes have been approved for new franchises. The Avenue "C" bus line has not been approved, the Board expressing the opinion that it should be abandoned. The continuation of the line appears to be justified, provided it is changed as recommended. These changes have all been considered in preparing the Comprehensive Transit Plan.

The design of the transit system was based on three fundamental requirements, viz:

1. The proposed predominating multiple-family dwelling character of the district requires convenient, direct, and efficient service to the various business centers on Manhattan Island.
2. The Lower East Side must be conveniently accessible to other parts of Manhattan Island and the Greater City.
3. Direct, convenient and efficient transportation of passengers throughout all of the district itself must be provided for.

The routes which are needed to provide for these requirements are as follows:

"A"

14th Street Crosstown Line

This line was well patronized in 1930, having carried a total of 19,019,086 passengers. While there are no records available as to the distribution of this traffic along the line, field observation indicates that a large percentage of the riding is within and to and from the district. The riding characteristics now found will change considerably with reconstruction of all or any large part of the Lower East Side. It is considered, however, that the routing and service should be substantially as at present, and the recommended route is as follows:

From the ferry at the foot of W. 23rd Street on 11th Avenue to 14th Street, thence east to Avenue "A," to Essex, to Grand, to Clinton, to Hester, to Essex, thence north on Essex and return to ferry by the same route.

The following factors led to this recommendation:

- (a) Route is preserved substantially as at present.
- (b) Car tracks may be removed from Clinton Street and Avenue "B," facilitating vehicular movement on Schiff Parkway at and adjacent to the Williamsburg Bridge Plaza. The present objectionable loop routing at Schiff Parkway, with the attendant left turns, is removed.
- (c) Convenient transfer points are provided at Houston Street, Schiff Parkway, and Grand Street.
- (d) North-south local vehicular traffic within and through the central part of the district is facilitated.
- (e) The new routing affords a transfer point with the proposed subway in East Broadway.

"B"

Avenue "B" Line

The Board of Transportation has approved the substitution of a bus line for this street car line. The route recommended for this line is as follows:

From First Avenue and East 26th Street on First Avenue to East 24th, to Marginal Way, to

Avenue "B," to Clinton Street, to East Broadway, to Park Row, to Post Office. Return by the same route.

Although this is slightly different from the recommendation of the Board of Transportation, the advantages gained by this change are as follows:

- (a) Existing car tracks are removed from Avenue "B" and Clinton Street, facilitating vehicular traffic movement on Schiff Parkway.
- (b) Elimination of existing turns which cause interference with vehicular traffic movement.
- (c) The new bus routing provides for service essentially in a north-south direction, the extension northward from 14th Street replacing the present northerly end of the Avenue "C" bus line. The result will be increased convenience for present Avenue "C" line passengers desiring to continue southward, eliminating the present transfer. This routing should increase volume of riding, since it replaces both the Avenue "B" street car and Avenue "C" bus lines.
- (d) It may be found desirable to extend this route to 42nd Street to avoid transfer to Second Avenue elevated at 23rd Street. This can be tried as an experiment after the line is placed in operation to 23rd Street.

"C"

8th Street Crosstown

This car line has also been approved by the Board of Transportation for replacement by buses. Inasmuch as the thoroughfare plan proposes the use of East 10th Street as a secondary cross-town traffic thoroughfare, the bus line has been routed over it from the East River to Stuyvesant Street, thence to East 8th Street as at present.

The route recommended for this bus line would be as follows:

- From Christopher Street ferry on West Street to Christopher, to Greenwich Avenue, to 8th Street, to Stuyvesant Street, to East 10th Street, to river. Return same route.
- The advantages of the change are as follows:
- (a) The route is more direct, and eliminates many unnecessary turns.
 - (b) Route will serve the same area as at present.
 - (c) Transfer to car lines on Avenue "A" and 2nd Avenue will be more convenient.
 - (d) Movement will be on a secondary traffic thoroughfare and removed from local residential streets.

"D"

GRAND STREET CROSS-TOWN

The Grand Street Cross-town line is retained as at present.

"E"

First Avenue Line

This is a well patronized line at present, but no great amount of its traffic can be attributed to the Lower East Side. The retention of the present routing will afford fairly direct service to the mid-Manhattan area between East 14th and 42nd Streets. Coordination with the Avenue "D"-Cherry bus line and the 8th Street Cross-town bus as well as the 14th Street Cross-town at the various points of intersection is recommended.

"F"

Second Avenue Line

It is recommended that this line be changed from a street car to a bus as approved by the Board of Transportation. At the present time its route through the district is direct, but there are objectionable turning movements on Chrystie and Forsyth Streets at both Houston and Grand Streets.

The route recommended for the bus is as follows:

From 129th Street and Second Avenue, on Second Avenue, to Chrystie, to Grand, to Bowery, to Worth, to Broadway. Return same route.

The principal change in the bus route as compared to the present route of the street car line is its removal from Forsyth Street.

This is a well used line and the riding habit in the section of the district now served justifies its retention. Even after the construction of the proposed Second Avenue Subway, it should probably be retained to afford a short haul surface facility.

"G"

Third Avenue Line

This is the most intensely used surface line of any that pass through or is adjacent to the Lower East Side. The entire westerly boundary of the district on the Bowery and Third Avenue from Bayard on the south to East 14th Street on the north is traversed by this line.

Because of its location one block nearer to the center of Manhattan Island it carries over 26 million passengers per year as compared to about 7 million found on the Second Avenue line.

The Third Avenue line is recommended to be retained as now routed, although it is hoped that the company will be able to replace the present equipment with more comfortable, modern cars.

"H"

Fourth Avenue-Madison Line

With the exception of that part of this route on Broome and Centre Streets, it follows the westerly edge of the district along the Bowery. While probably not as important a surface facility for the Lower East Side as the Third Avenue line, the passengers carried last year amounted to nearly 15 million, which indicates that it should be retained.

There has been recent agitation by the property owners on both Fourth Avenue and Madison Avenue for the replacement of this street car line by buses. This change would afford somewhat better service for patrons from the district and should not be discouraged. No change is recommended in the present routing.

"I"

Broadway-Seventh Avenue Line

This line is so far removed from the district that its value as a direct means of surface transportation is questionable. It has an indirect bearing on the transit situation as a transfer point for the various cross-town lines connecting it with the district. It is well patronized, having carried over 16 million passengers last year and probably should be retained as now routed.

"J"

Seventh Avenue-Delancey Street Line

Since it is desirable that the street car tracks be removed from St. Marks Place and East 9th Street, and since the riding on this rush-hour line is quite limited, it is recommended that this service be discontinued. Ample cross-town service is provided on East 14th Street, East 10th Street, and East Houston Street to care for this movement.

"K"

B-15 Manhattan Bridge

The riding to and from the south-western part of the district across the Manhattan Bridge on this bus line is quite heavy, nearly 5 million passengers having been carried last year. This is true although the line is short and there are few feeder surface lines tributary to either end of the bus line.

Field observation discloses heavy riding from Brooklyn to the Bowery at Canal Street in the evening, and full seating capacity loading of buses during most of the day.

The line is recommended to be retained and no change in routing is suggested.

"L"

Madison-Chambers

This is the most heavily used bus line operating to or within the district, having carried 8 million passengers last year. No distribution of riding along the line is available, but from field observation it appears that over 50 per cent of the passengers are picked up or discharged within the district.

Certain changes in routing appear desirable. The recommended routing and the reasons for making changes are discussed below.

Route

From West and Chambers Streets on Chambers to New Chambers, to Cherry, to Jackson, to Grand, to Columbia, to Avenue "D," to 14th Street, to Second Avenue. Return same route. Alternate buses to operate to the Wall Street center as follows: From New Chambers and Cherry on Cherry to Pearl, to Wall Street, to Water Street, to Dover, to Pearl, to Cherry, to New Chambers.

Reasons for the changes recommended are as follows:

- (a) Relocation of the line on Cherry Street and Avenue "D" improves the distribution of facilities by reducing overlapping service areas.
- (b) Under the present routing, it is difficult to reach the central and northern part of the district from the area between the East River and East Broadway. Extending the line northward in Avenue "D" provides for better communication within the district and connection with cross-town service on Grand, Delancey, Houston and East 8th Street. Turning eastward on 14th Street it connects the northern with the southern part of the district, as well as creating transfer points for the line at Avenue "B," and 2nd Avenue.
- (c) Avenue "D" was selected as the northerly extension of the route because it will provide a better distribution of facilities than if Avenue "C" were used, and further because Avenue "D" is recommended as a secondary thoroughfare.
- (d) Providing for the operation of alternate buses to Wall Street affords direct surface line communication to and from the Wall Street financial center by a bus line which is convenient to a large part of the district.

"M"

Spring-Delancey

This line is recommended to be retained with only a minor adjustment in routing. After the widening of Kenmare Street has been carried out the route should be changed so as to operate westward on Spring and eastward on Broome, the turns from and into Kenmare Street being made at Mulberry Street instead of at the Bowery as at present. There will always be a heavy traffic movement on both the Bowery and Kenmare Street, and turning movements here should be avoided as much as possible.

"N"

Avenue "C"

This is the bus route which is recommended to be discontinued by the Board of Transportation. Only part of the line extending northward from Houston Street is here recommended to be abandoned. Cross-town service on Houston Street after the street has been widened to the East River will be needed.

That part of the line extending northward which is abandoned is replaced under the plan by the extension of the Avenue "B" bus line and that part of the Cherry Street line in Avenue "D."

The present 8th Street Cross-town car line and the Spring-Delancey bus line each carry about 3½ million people per year. The former reaches the Christopher Street ferry and the latter the Desbrosses Street ferry. These lines are over ½ mile apart through the district. The Avenue "C" line carried 1½ million passengers last year. Its westward terminus is also the Desbrosses Street ferry.

"O"

Bus Line on Williamsburg Bridge

The removal of all of the car lines from the Williamsburg Bridge has been previously referred to. The vehicular traffic over this bridge shows an increase for the year 1930 above 1929, while that on the Manhattan and Brooklyn Bridges declined. The number of cars and the number of passengers carried in cars in 1930 was less than 1929 for both the Williamsburg and Manhattan Bridges. During the same period the number of cars increased while the number of passengers decreased on the Brooklyn Bridge.

Field observation shows that there is congestion on the Williamsburg Bridge on the vehicular roadways, while the space occupied by street car tracks is idle a large part of the time.

Elimination of traffic congestion will be of direct benefit to the district. The major and secondary

thoroughfare plan (Plate 10) recommends certain readjustments for facilitating through movement to and from the bridges.

The relation of vehicular traffic movement to this bridge is discussed in greater detail in Part 1, Plate 8. Surface and rapid transit cars now carry about three times as many people as do the passenger and commercial vehicles using the bridge. Removing the street car tracks must be accompanied by providing equivalent or superior service; it is essential that the bridge be utilized to the best advantage. This is not being done when the street car lanes are idle and the roadways overcrowded.

It is, therefore, recommended that buses be substituted across the bridge in place of the present surface street cars. The two lanes now being used for street cars should be used for vehicular movement and necessary adjustments made in the street arrangement of the approaches to facilitate the new traffic movements.

At the Manhattan end the buses would turn on the surface at the Essex Street intersection. The present east-bound roadway would become the commercial lane and the high speed lane would pass under Clinton Street, utilizing the underground terminal as an approach, the ramp leading to it beginning near Allen Street; west-bound buses would use the northerly or commercial lane. The high speed through traffic would be cared for on the present northerly street car lane which would be elevated to pass over Clinton Street.

The Brooklyn lines now crossing the bridge, Ralph-Rockaway, Reid, Nostrand and Tompkins, would terminate at the Brooklyn street car terminal, transferring Manhattan passengers to the bridge buses.

No change is recommended in the eleven Brooklyn car lines now crossing the Brooklyn Bridge.

Possible Subway Loop on Manhattan Island

While no definite recommendations are made in this plan for changes in the Board of Transportation's comprehensive rapid transit plan, it is suggested that at such time as that part of the second step which includes the subway in Pearl, Chrystie Streets, and Second Avenue is constructed, a loop route should be created which would connect the downtown, mid-Manhattan, and uptown business centers with the future extensive multiple-dwelling areas along the east and possibly west sides of the island.

Such a loop might be operated through the I. R. T. subway in Seventh Avenue, the 42nd Street cross-town route, the proposed Second Ave-

nue—Chrystie—Pearl Street subway to Fulton Street, and thence westward to the Seventh Avenue line. The uptown cross-town movement could also be made either in 53rd Street or 61st Street, both of which will ultimately have cross-town subways.

While the comprehensive transit plan here presented supplies the surface facilities required for local movement within the district and to adjacent business areas on Manhattan Island, the rapid transit lines also afford transportation to the financial center, the uptown commercial centers and across town on 14th and Houston Street. There will be need for a wider distribution of passengers from the close-in dwelling areas to all of that part of Manhattan below 59th Street. Some such loop line operation as suggested above would supply this need to a large extent.

Such a plan would involve joint use of facilities now operated by separate companies, but this might be arranged even if no general unification plan has been agreed upon by that time.

Comparison of Present Transit Facilities with Proposed Comprehensive Plan

In a general way the arrangement of the transit facilities serving the Lower East Side is similar to that of Manhattan as a whole. The principal lines extend in a north-south direction, with the secondary or feeder lines across the island.

At the present time all of the avenues north of Houston Street from Third Avenue to Avenue "C" contain transit facilities in one form or another. This is unnecessary from the standpoint of general traffic movement and undesirable from the standpoint of reconstruction by neighborhood units. The proposed plan recommends the ultimate re-

moval of the Second Avenue elevated line from First Avenue, the car tracks from Second Avenue and Avenue "B," and the bus line from Avenue "C." While car lines would remain on Third Avenue and the Bowery and on Avenue "A," the remaining avenues would be either entirely free of transit lines or would have bus operation with consequent improvement in traffic movement. In addition, except for Avenue "A," Essex and Hester Streets, and Cherry Street, transit lines would be concentrated on major and secondary thoroughfares. Under the plan, the surface lines which would extend northward beyond 14th Street would be the new Avenue "B" bus line extending to 26th Street or beyond if required, the First Avenue car line, the Second Avenue bus northward to 129th Street, and the Third Avenue car line. In this part of the district, cross-town service by bus is substituted on East 10th Street for the 8th Street car line, while the 14th Street line remains as at present.

In that part of the district between East Houston and Division Streets there are too many lines in both directions. This is partly the result of present street conditions. The plan provides for the removal of car tracks from Forsyth and Chrystie and from most of Clinton Street. Allen Street would be free of surface transit service. Cross-town service would be afforded on Houston, Schiff Parkway, and Grand Street.

In the area between Division Street and the East River, the present car line on East Broadway would be removed and replaced by a bus line and the Madison Street bus moved southward to Cherry Street, so that all parts of the area would be more conveniently served. In addition to cross-town routes on Worth and Chambers Streets, buses would operate to Wall Street.

PART FIVE
A LARGE-SCALE UNIT TYPE OF
BUILDING OPERATION FOR THE
LOWER EAST SIDE

By JOHN TAYLOR BOYD, JR.

SECTION ONE

DESCRIPTION OF NEIGHBORHOOD

UNIT PLANS

The purpose of this preliminary analysis of large scale building operations was to discover the practical possibilities of reconstruction on the Lower East Side.

It has been suggested that the most promising way to change the character of present conditions created by the blocks of old, depreciated tenement structures on the Lower East Side is to make a building operation so comprehensive in size as to effect a complete change in environment.

Previous studies have shown the relation of this area to the city at large and major and secondary thoroughfares have been planned which will provide for all important traffic and transportation needs. Areas lying between main thoroughfares can and should be constructed as self-contained neighborhood units. Only in this way can reconstruction be made on a practical and economical basis.

Description of Unit Area

The unit selected for analysis is a rectangle, nearly square in shape. It fronts on the East River just east of the Manhattan Bridge and is bounded by Rutgers Street, East Broadway, Gouverneur, and South Streets.

The district is excellently served with transportation facilities. A subway station on the new Eighth Avenue line will connect the district with the subway system of New York. The center of the unit is less than a quarter mile walk from this subway station, and the furthest building in the whole area is less than one-half mile away. The area will also be served by a bus line along Cherry Street.

This unit area was chosen because it happens to be most typical of the Lower East Side.

On Plate No. 21—the existing plan of the area—the black portions show how the twenty-nine small blocks are almost solidly built up with structures. These are mostly residence buildings, largely "old-law" tenements, built generally on frontages of no more than 26 feet, with a fringe of low, generally depreciated, industrial and commercial buildings, chiefly garages and warehouses, occupying the two tiers of blocks along the waterfront. There are but few public or community buildings in the area, these consisting of one school and two play-

grounds, one public bathhouse, one municipal courthouse, one hospital, nine small synagogues, and two or three recreational buildings. The unit contains little tax-exempt property, and nearly all private property is mortgaged. The tenement buildings are from three to six stories in height, most of them being six stories.

The area is approximately 1,300 feet across between East Broadway and the East River, and 1,600 feet in the opposite dimension of the rectangle. It is extremely flat, sloping very gently down to the river from elevations of 23 to 35 feet on East Broadway to 3 and 5 feet at the docks.

The streets are generally 60 feet wide, with a 50-foot width in a few instances, and represent the old street plot of New York of the late 18th century. The streets are generally lined with shops of varying prosperity. There are no chain stores in the district, which indicates that its shopping opportunities are limited under present conditions.

The following statistics are descriptive of existing conditions within the unit area.*

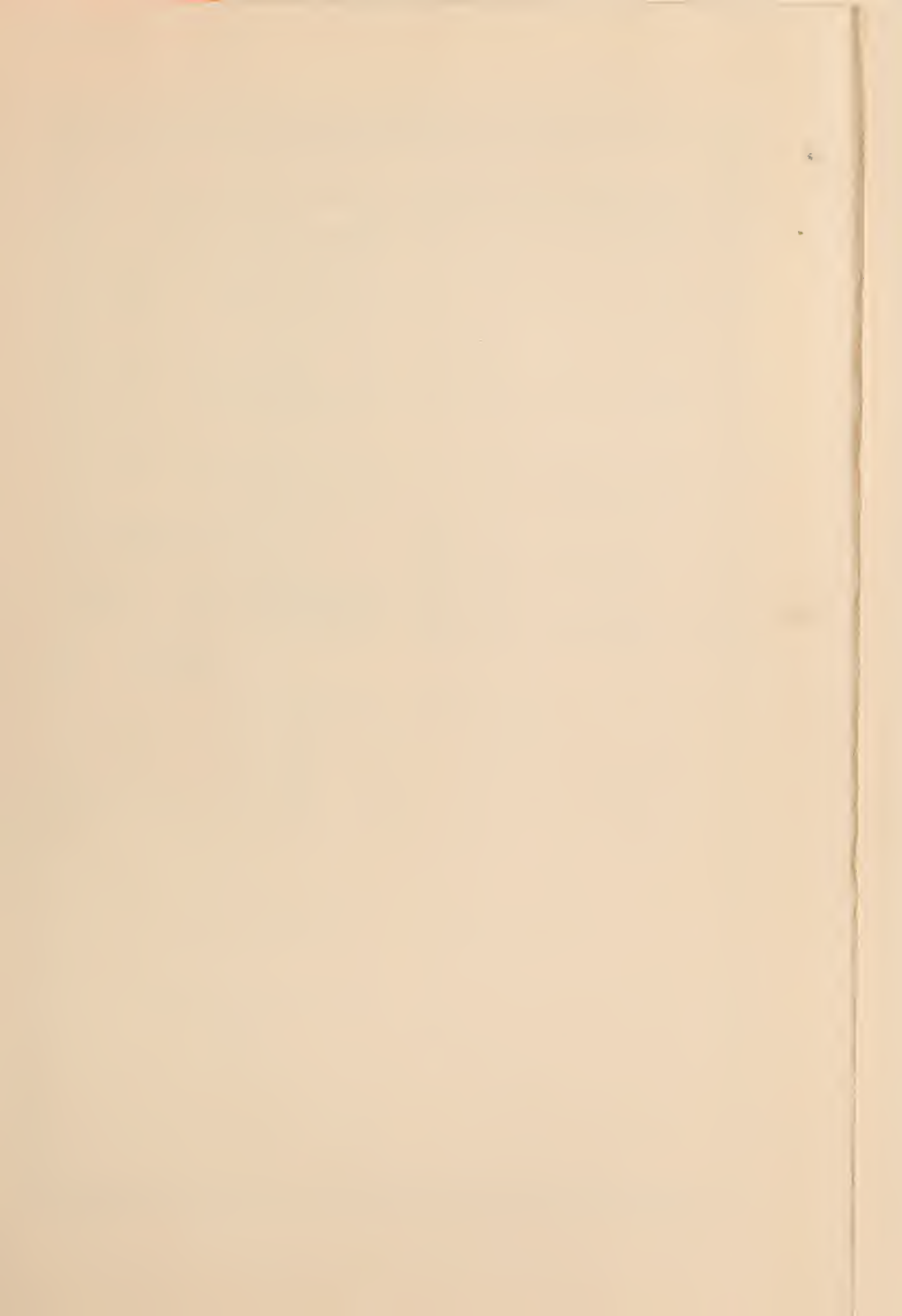
Table No. 10

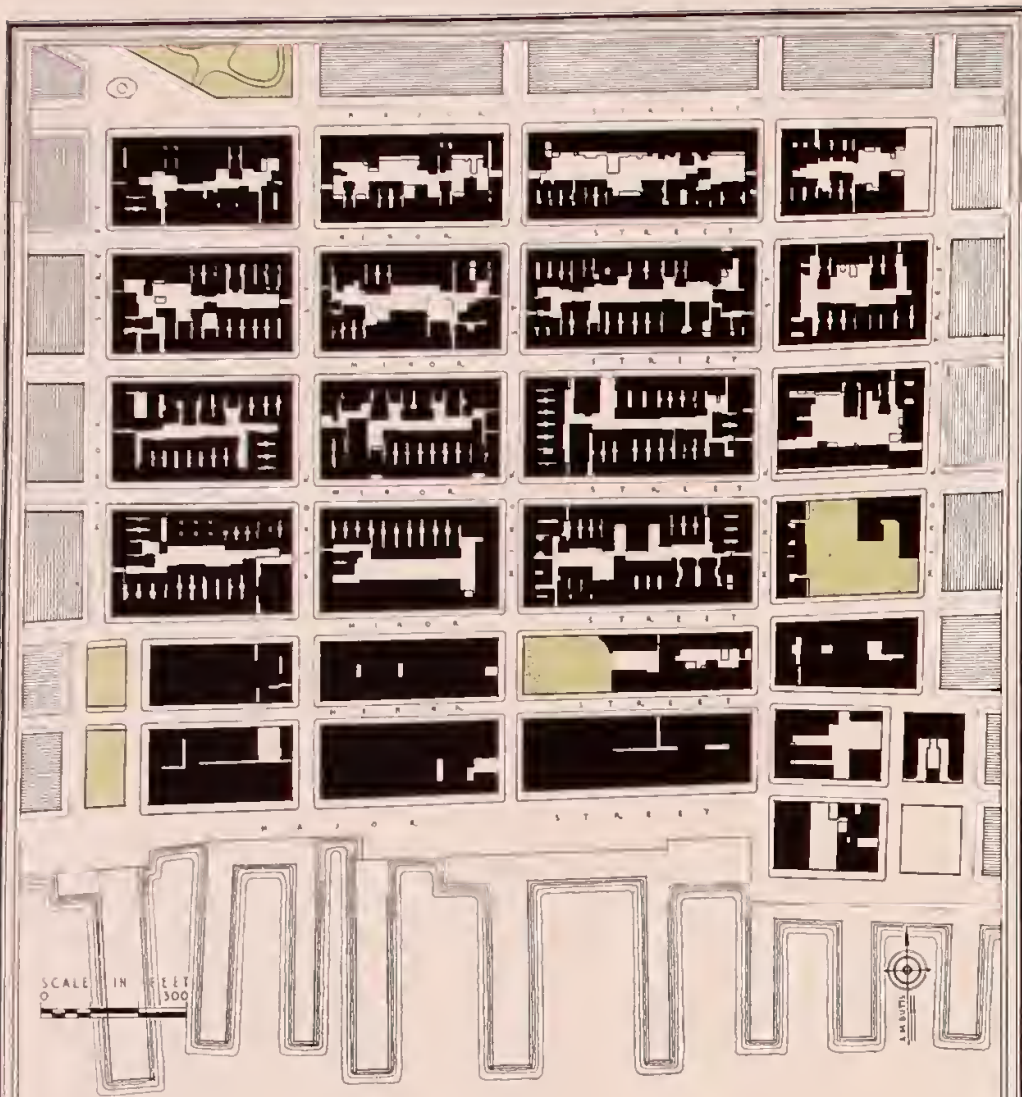
EXISTING CONDITIONS WITHIN NEIGHBORHOOD UNIT

Total Area	2,583,760 sq. ft. or 59.3 Acres
Area Within Blocks 1,592,916 sq. ft. or 36.57 Acres	
Area in Streets	990,842 sq. ft. or 22.75 Acres
Percentage of Total Area in Streets	38.3%
Existing Population, 1930 Census	15,200
The 1931 Assessed Value of Land and Improvements is	\$15,162,000
The 1931 Valuation of Exempted Property is	2,749,000
Total Value of Property	17,911,000
Average Net Value of Property per Square Foot	\$11.25
Average Net Value of Property in the Lower East Side per sq. ft.	\$13.60

*The exact boundaries of the area are the center line of East Broadway and Gouverneur Streets, west line of east half of Gouverneur Slip, existing bulkhead line of South Street, east line of west half of Rutgers Slip, and the center line of Rutgers Street.

Mr. Joseph Platzker, Secretary of the East Side Chamber of Commerce, has made a special survey





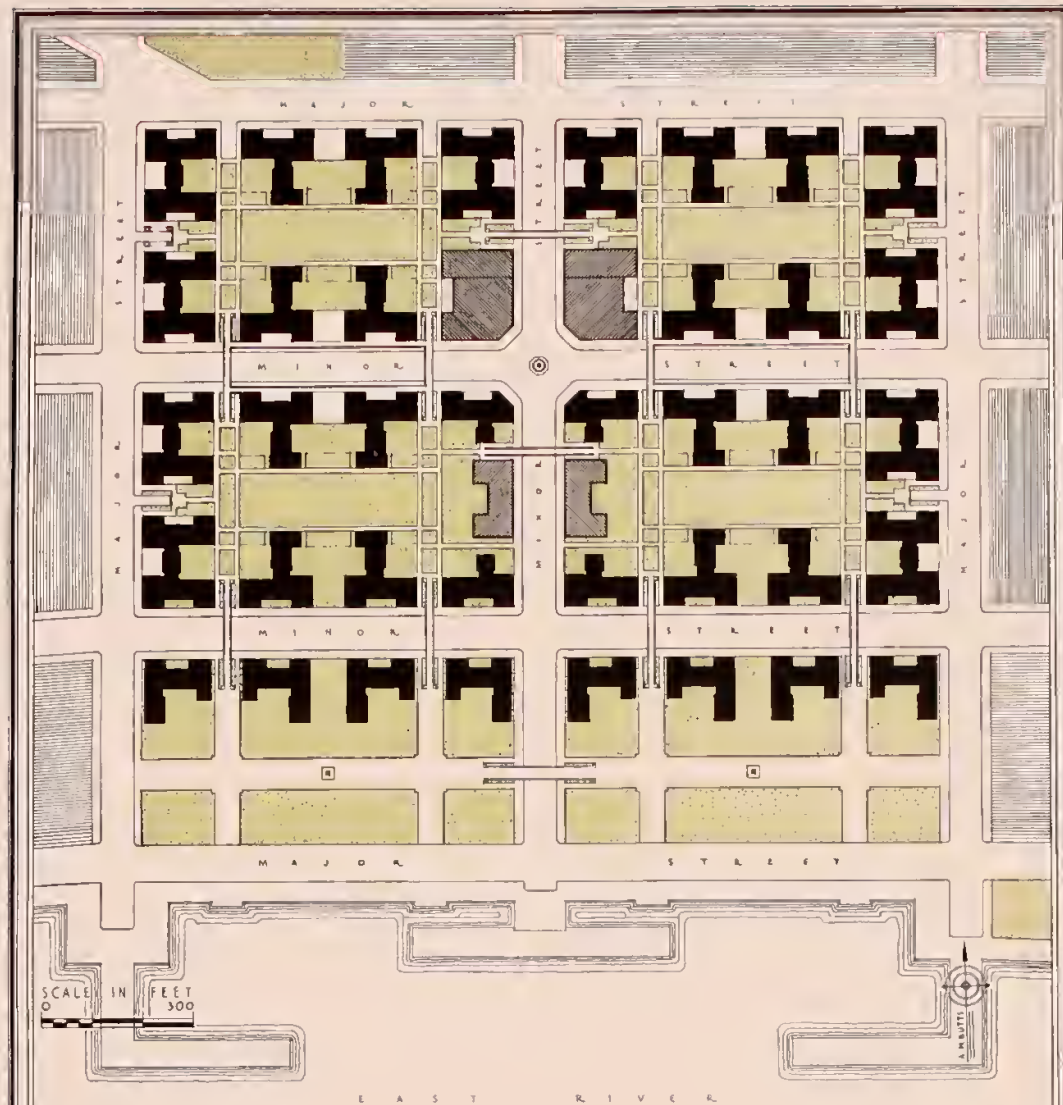
EXISTING CONDITIONS
PLAN

SHOWING STREETS AND BUILDING BLOCKS IN AREA
SELECTED FOR DEMONSTRATING THE POSSIBILITIES
OF NEIGHBORHOOD UNIT PLANNING

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION
MAY 1, 1932

HARLAND BARTHOLOMEW & ASSOCIATES, CITY PLAN & LANDSCAPE ENGINEERS - JOHN TAYLOR BOYD, JR., CONSULTING ARCHITECT



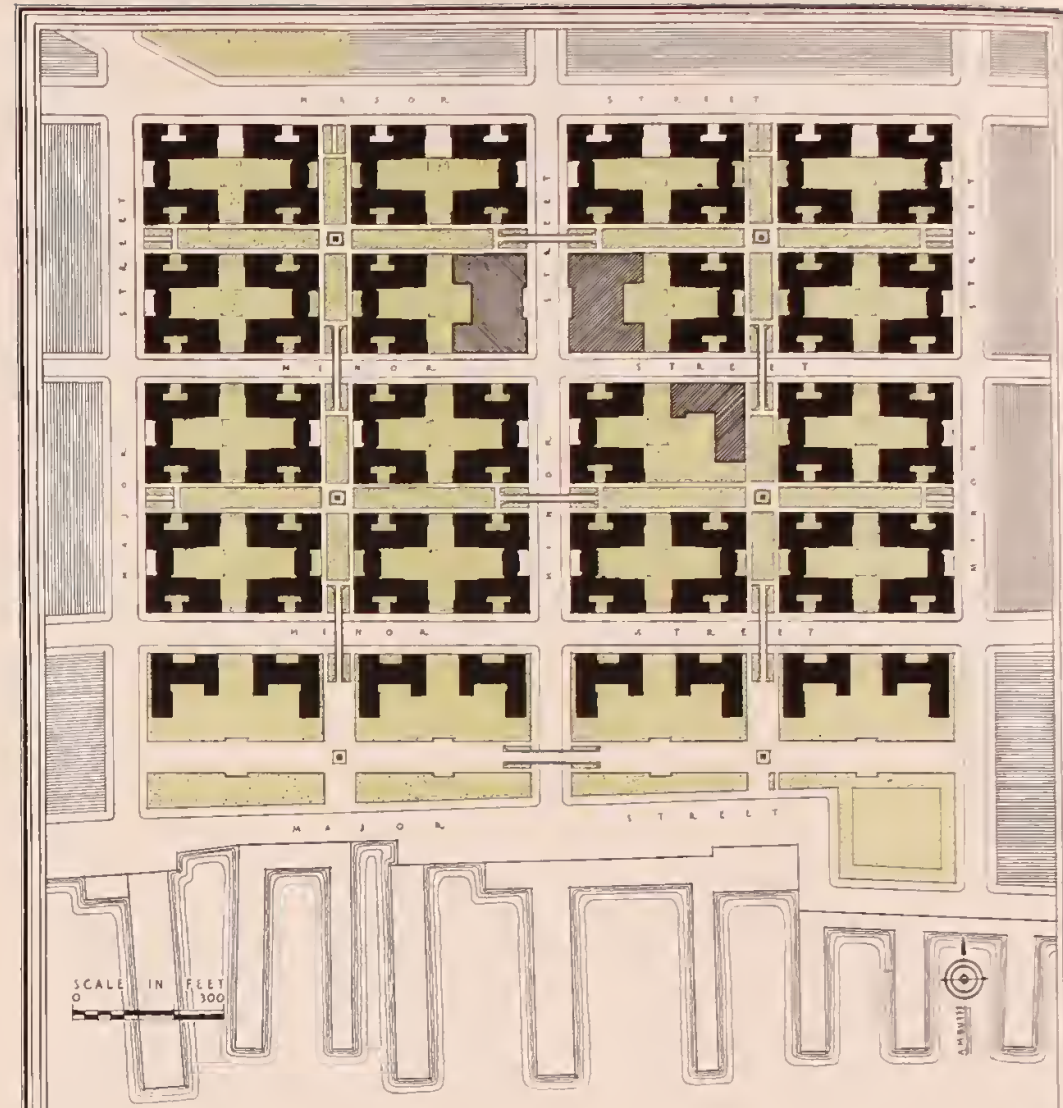
NEIGHBORHOOD UNIT
PLAN "A"

DEVELOPMENT OF HIGH FIRE-PROOF APARTMENT
BUILDINGS IN SUPER-BLOCKS ALTERNATE STREETS
CLOSED FOR PARK AND PEDESTRIAN USE

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NEIGHBORHOOD UNIT
PLAN "B"

DEVELOPMENT OF SIX-STORY APARTMENTS WITH
TWELVE-STORY APARTMENTS ALONG WATER-FRONT
ALTERNATE STREETS RESTRICTED TO PEDESTRIAN USE

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of real estate conditions in the area for this report, which is summarized in the following statement:

"The area contains 391 old-law tenements, of which 26 are vacant and boarded up, 21 new-law tenements, and a number of old commercial buildings. Sixty per cent of the tenements are 'cold-water' flats. The tenements which are occupied have 5,684 apartments, of which 1,107 or 19 per cent are vacant. The average rentals are about \$6.00 per room per month, ranging from \$2.50 or \$3.00 a room up to \$12.00. The latter figure is for completely remodeled or modernized tenements. There are a considerable number of 3, 4, 6, and 8-family dwellings, occupied mostly by families who have lived in them for from 10 to 40 or more years. These dwellings show the smallest number of vacancies.

"The store vacancies were approximately 18 per cent on January 1, 1932. The majority of the stores are rented on a month-to-month basis at from \$20.00 to \$100.00 a month, with an average of about \$50.00.

"Real estate valuations are on the decline, as these facts clearly indicate and as the reduction of about 7½ per cent in the total assessed valuation in the area for 1932 as compared with 1931, also shows.

Replanning for Neighborhood Unit

The area was replanned as a complete neighborhood unit lying between major traffic streets as boundaries, with full provisions for community facilities and for shopping and other commercial uses; educational and religious needs; and parks, playgrounds, and other recreational uses. The whole was carefully coordinated so as to insure the maximum of good living conditions and amenities, convenience, easy access to all portions and to all buildings of the unit, and separation of vehicular and pedestrian circulation.

Also, the highest standards were aimed at, those which should realize the maximum benefits with respect to utilization of land without sacrificing good living conditions or needs of light, air, and open space, or fine architectural character. Existing real estate conditions that hampered the attainment of these objectives were disregarded.

Accordingly, this land was assumed to be under a single ownership. It was planned as a whole, even though not necessarily intended to be constructed at one time. All buildings were to be razed and the area entirely reconstructed. The streets within the area were either retained or altered or modified as suited the integrity of the plan. The bounding streets, which were major traffic streets, were

widened to provide sufficient traffic lanes and parking space.

Two studies were made for the area. One plan for reconstruction with 6-story buildings similar in standard to the Amalgamated houses at Grand Street, called Plan "B" (see Plates No. 21 and No. 23). The other is a plan for tall fireproof buildings ranging from 12 to 18 stories in average height, called Plan "A," shown on Plate Nos. 21, 22, and 23. In Plan "B" the street arrangement was kept practically as at present, except for the widening of the boundary traffic streets to permit adequate flow of vehicles. Also, Water Street, being entirely superfluous, was closed and its area was converted into park space, part of a park strip along the waterfront. The remainder of this park was contributed by land assumed to be bought from the neighborhood unit by the city at cost of acquisition to the neighborhood unit. Clinton and Montgomery Streets, both 50 feet wide at present, were widened in order to provide a 45 degree sunlight angle for the 6-story buildings. In addition, slight changes were made in the streets for technical purposes of this study. This was done because it was found that sixteen of the blocks could be averaged or "equalized" so as to be exactly alike in shape and dimensions, with but slight change in the location of these streets. This minor change made it possible to design four standard types of building units for the area as a whole. Otherwise it would have been necessary to make a large number of special designs for odd-size blocks. This equalization will not affect the results of the analysis to any appreciable degree.

Plan "B"

In the 6-story building project, Plan "B," the streets were not closed, except for Water Street and one block of Front Street. The difference is that seven minor streets or interior streets of the unit (after Water Street had been eliminated) were assumed to be restricted to pedestrian use. This permitted pedestrians to circulate throughout the entire area, crossing over motor streets on seven small bridges which pass over the three interior motor streets. By this means children may go to the schools and adults reach the subway stations, shops, stores or offices, and all may reach community buildings, parks, playgrounds, and the riverfront park without crossing motor traffic. Of the three motor streets remaining, Clinton Street divides the unit in two, north and south, intersected by Madison Street and by Cherry Street. Cherry Street has been widened as a local transit route on the plate. This widening has been in-

creased to 80 feet in order to allow the fringe of fireproof apartments along the waterfront to be carried to 12 stories and so as to provide good light and air.

The community center of the neighborhood unit is located near its center, where it is easily accessible to all parts of the unit, both to the pedestrian and to the vehicular streets. The development of this community center is a subject in itself which could not be exhaustively treated within the limits of this analysis. It has been deemed sufficient to allocate a certain portion of the area for community features, such as schools; church, civic, and club activities; theatres and recreation buildings; large garages; and shopping areas, as shown on the ground floor plan of the Unit "B." In practice, of course, a different distribution of these community functions, and probably a wider separation of some of them, such as the churches and synagogues, might be necessary and desirable. Shopping areas are confined to the three bounding streets, away from the river front, and to one of the two intersecting interior streets, having the community center at the intersection.



THE AMALGAMATED DWELLINGS INC.—GRAND AND COLUMBIA

Emphasis was placed on the plan of the residence buildings as the most essential part of the analysis. The 6-story apartments cover approximately 58 per cent of the area as compared with a maximum coverage permitted under the law of nearly 70 per cent. This coverage permits splendid light and air, equal at least to the standard of the Amalgamated Grand Street block. In addition, the two U-shaped buildings on each block are separated by a distance varying from 50 to 52 feet, thus

allowing sunlight to pour into the large open areas comprising the interior of the block. The garden in the interior of the block is 241 feet long and varies from 60 to 63 feet in width, and is thus wider than the streets. The apartments are generally planned two rooms deep to allow cross-circulation. In nearly all cases they have splendid exposure, circulation of air, and garden outlook.

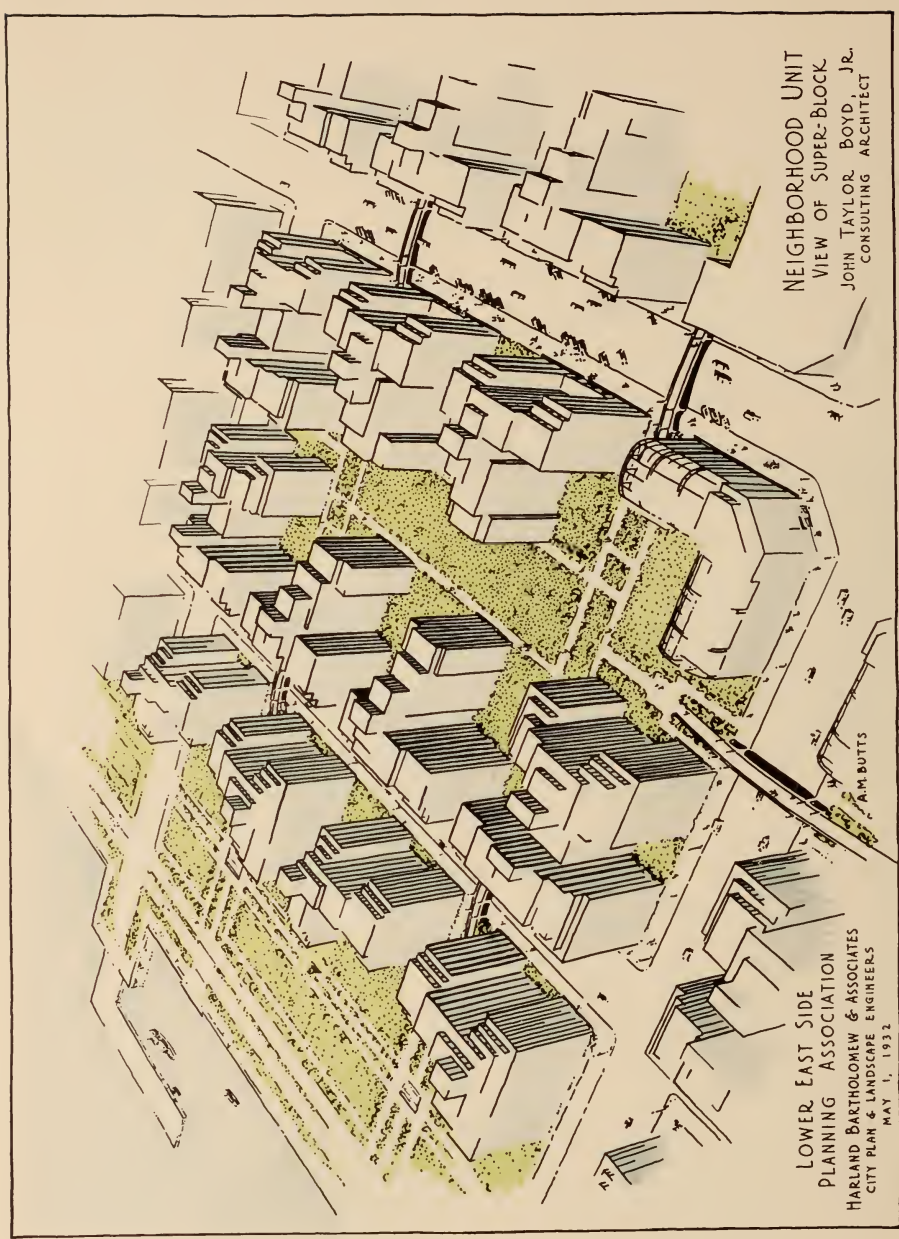
The combination of exceptional openness, light and air, with a comparatively high coverage, makes for economic soundness. The analysis was carried far enough to show that if the coverage were increased only to 65 per cent, a marked lowering in the standard of light and air would result. And on the other hand, it would not provide enough additional rooms to make these added rooms profitable.



INTERIOR COURT OF THE AMALGAMATED DWELLINGS

The apartments generally are three or four-room suites, with dining alcoves in some cases. The rooms average about 246 square feet gross floor space, which compares favorably with the standard of the Amalgamated houses, which is approximately 249 square feet. They are provided with ample foyer, closets, standardized kitchens, and bathrooms. In most cases the bedrooms are entered from the foyer or from a small hallway leading from the foyer. In other words, the buildings follow the best standards for non-fireproof apartments renting for \$20.00 per room, more or less, in Brooklyn, Bronx and Queens.

The financial set-up for the 6-story group of buildings shows rentals of less than \$18.00 per room per month with a five per cent allowance for vacancies. The income from shops and other commercial sites in the unit would reduce this rental



NEIGHBORHOOD UNIT
VIEW OF SUPER-BLOCK.
JOHN TAYLOR BOYD, JR.,
CONSULTING ARCHITECT

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CITY PLAN & LANDSCAPE ENGINEERS
MAY 1, 1932

LOWER EAST SIDE
NEW YORK CITY
PLATE NUMBER TWENTY-TWO

to below \$16.00 per month.

These rentals are figured on the following basis: the base figure for the land in the district at 1931 assessed valuation is an average of \$11.25 per square foot; the cost of widening the two narrow streets raises it to \$11.33 per square foot; and 75 cents is added to cover the cost of demolishing the old buildings—making the total land cost \$12.08 per square foot. Land is assumed to be sold to the city for school and park sites and to church organizations at \$11.25. The site for the theatre is leased at 9 per cent on land cost. Annual fixed charges are figured at 7 per cent on total cost. This figure represents 5 per cent interest and 2 per cent amortization on a 60 per cent mortgage, and a 7 per cent dividend on 40 per cent equity.

Taxes are estimated on the basis of three different methods, which were made to solve the difficulty of figuring what the future land value would be after the reconstruction. Other annual costs, including maintenance, are lumped under the heading of "Operating Cost." They are \$40.00 a room a year, a figure which is said to be adequate for large block operations in the light of the experience of the State Board of Housing and the managers of the Amalgamated dwellings.

Store incomes have been conservatively computed on the basis of allowing 30 linear feet of store frontage per 100 people, at an average rate of \$200.00 gross rental per front foot per year. In estimating the income from the garages, it is assumed that the average of one car for three families in New York City will prevail in this district. Somewhat more than one-half of the cars whose owners use their cars mainly on week-ends can be kept in two building garages of the type known as "park garage." The remaining car owners who are assumed to use their cars constantly can keep them in underground garages located in the blocks. The number of cars and the proportions between the two types may be easily varied in practice.

Construction costs are figured at 35 cents per cubic foot for non-fireproof construction and at 50 cents for fireproof construction. These figures include cost of labor and materials, fees and profits, and carrying charges during construction. They are said to be conservative by the New York State Board of Housing, by Mr. Barnard Raymond of the Amalgamated dwellings, and by other authorities.

Plan "A"

Plan "A"—the vertical development with a much more progressive standard of high fireproof

buildings, up to an average of 18 stories in height—shows a type of neighborhood unit planning that is superior in almost every respect to the 6-story standard experimented with in Plan "B."

Plan "A" shows the following improvements: The sixteen blocks between East Broadway and Cherry Street are consolidated into four "super-blocks"; and the apartment buildings are located on the edges of each superblock, around an open space or garden 121 feet to 309 feet broad and 445 feet long. The community center occupies a corner site in each superblock. The alternate streets, which in Plan "B" are merely restricted to pedestrian use, are closed in Plan "A." Plan "A" likewise provides a system of pedestrian circulation to all parts of the unit, completely separated from motor circulation by 11 bridges. The bridges facilitate shops on two levels along certain portions of the business streets.

The closing of the alternate streets adds a great deal of light and air and throws additional open space into the blocks. It greatly facilitates, from a financial point of view, the planning of separate buildings instead of party wall structures. In fact, such closing of superfluous streets represents almost the only way that the city can provide adequate park space in closely built-up multi-family residence areas without prohibitive expense. The inclusion in the blocks of the closed street area lowers the coverage from 47.9 per cent to 36.3 per cent. The total street closings of 321,910 square feet provide additional area for open park space within the superblock of 7.4 acres. The closing of these streets represents a substantial saving to the city which is thereby relieved of the necessity of providing even a small neighborhood park in the unit. It is true that in this case a park on the waterfront is planned that might serve the area to a considerable degree. This is a special facility that would not be included in other neighborhood units.

Plan "A" provides for certain widenings of main and secondary traffic thoroughfares where they are not now sufficiently wide. In addition certain interior streets were widened to permit tall buildings under the Multiple Dwellings Act.

This street space is to be deeded to the city for nothing and its cost is figured in the land value of the buildings, which rises accordingly from \$12.08 to \$13.36. This is a small expenditure in return for the privilege of building up to 15 stories without setbacks.

The re-allocation of land within the unit under these adjustments is as follows:

Area of land in streets closed off	321,910 sq. ft.
Area of land given to city by N. U. for street widenings in addition to that required for major thoroughfares	165,100 sq. ft.
Net gain to N. U. in exchange of land for street widenings and closings	156,810 sq. ft. or 4 $\frac{3}{4}$ acres

Rentals in Plan "A" would average \$18.00 a room a month for 12-story buildings and less than \$16.00 for 18-story buildings, under the capital set-up adopted. With buildings exempt from city tax, and with certain other economies that could probably be secured as several of the items for which present estimates have been conservatively computed, rentals could be brought within the limits of the State Housing Legislation which is \$12.50 per room per month. An outstanding fact from the analysis is that rentals would not be much higher for 18-story buildings than for 6-story non-fireproof buildings.

More community buildings would, of course, be required for the greater population of the high buildings. Such buildings are carried higher in Plan "A" except that an additional grade school is provided of the size constructed by the New York Board of Education. The schools are amply provided with playground space on the lot, on the roofs, and indoors on the ground floor, in accordance with New York practice.

On the other hand, in a practical operation it should be possible to investigate much further in detail the opportunity for diversity in the structures and in their architectural attractiveness. This is true in regard to both the grouping of the buildings and in the design of the individual structures. Possibly a more irregular and informal layout might be worked out. This analysis entered into architectural design only far enough to give practical form to the underlying economic and real estate factors involved. For this purpose, unit types of buildings were designed to apply to the

whole area and thus avoid endless special planning of buildings without affecting the general results.

For example, there might be greater variety in the height of structures, in their mass, and even in their character, depending largely on the rental market for various classes of apartments. Also, the community structures, particularly the churches, might be preferably more scattered among the group. The schools are located away from the shopping center. In this analysis the segregation of community and commercial structures was made chiefly for economic reasons—in order to determine their approximate size and also the amount of total land area required for them.

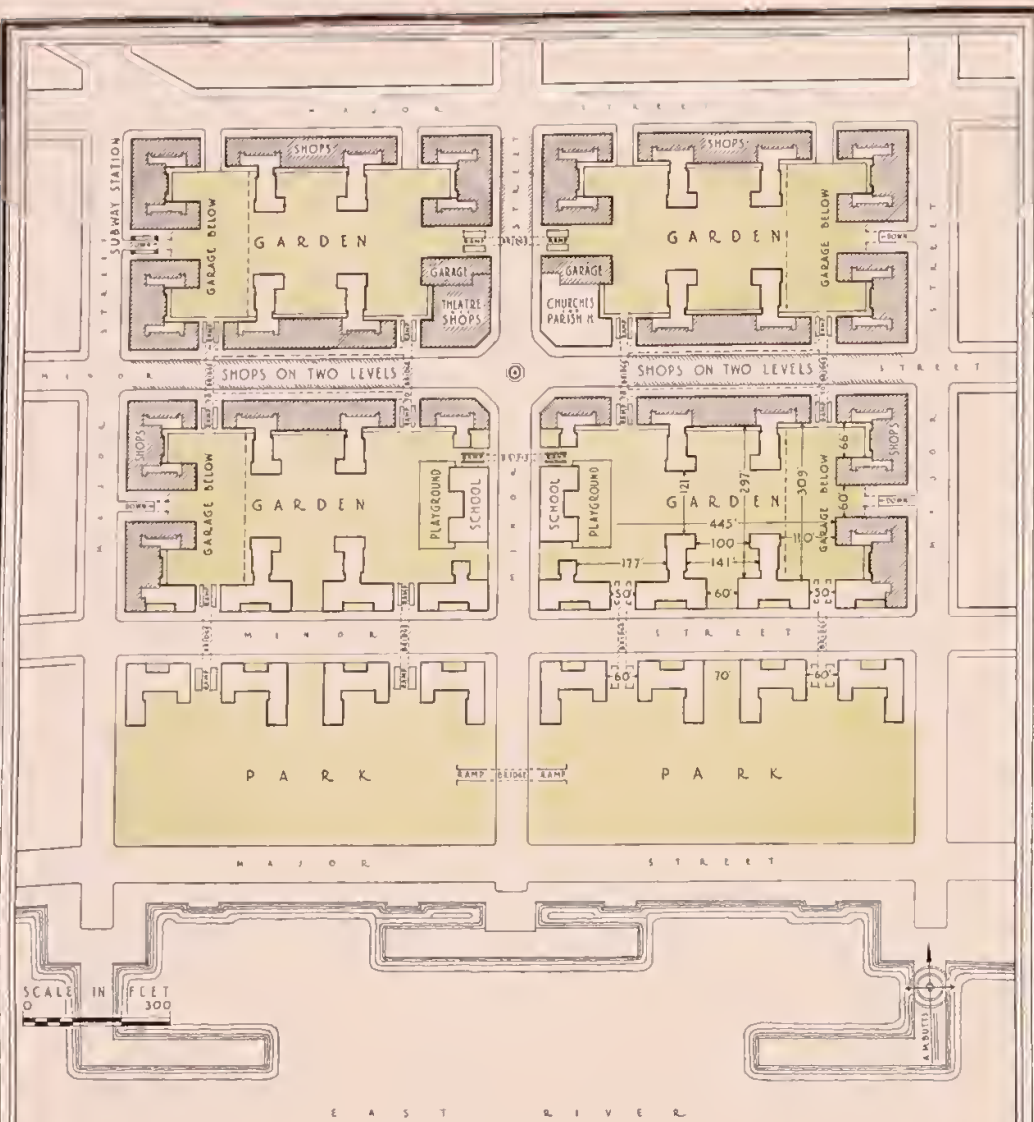
The general data concerning the two plans are summarized in the following statement.

Table No. 11

BUILDING DATA FOR NEIGHBORHOOD
UNIT PLANS "A" AND "B"

Item	Plan B	Plan A	Plan A
	6-story, 12-story on river	Average Height 12-story	Average Height 18-story
1. No. of Apartments	4,574	7,210	10,836
2. No. Dwelling Rooms	17,548	22,177	33,332
3. Gross Floor Area per Room (Sq. Ft.)	246	247	247
4. Total Population Possible	13,722	17,508	26,315
5. No. Rooms for Community Use	200	246	410
6. No. Rooms Occupied by Stores	752	905	1,250
7. No. Lin. Ft. of Store Frontage	4,272	4,940	7,200
8. Ratio No. Lin. Ft. Store Frontage per 100 Persons	31.1	28.2	27.4
9. Cubage Apt. Bldgs.			
6-story	40,936,980	—	—
12-story	10,816,000	—	—
Total	51,752,980	62,540,400	91,405,200
10. Area Covered by Apt. Bldgs.	668,014	481,080	481,080
11. Area within Blocks and Superblocks (Sq. Ft.)	1,161,450	1,324,160	1,324,160
12. Per Cent Covered	57.5	*36.3	*36.3

*Includes area in pedestrian streets.



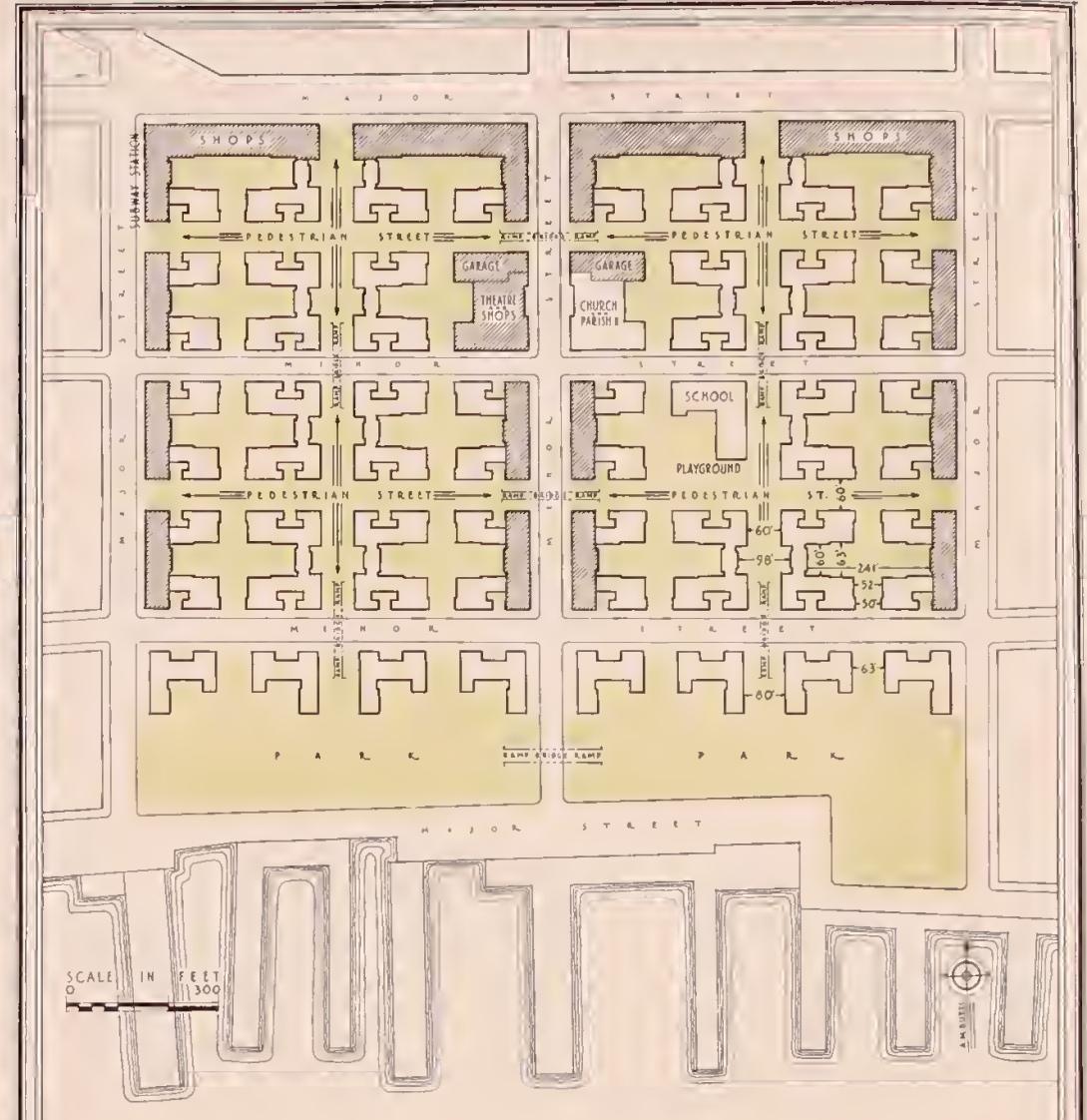
NEIGHBORHOOD UNIT PLAN "A"

GROUND PLAN SHOWING SHOPS, COMMERCIAL
AND COMMUNITY BUILDINGS, PARKS - VEHICULAR
STREETS WIDENED AND BRIDGED FOR PEDESTRIAN CROSSINGS

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION
MAY 1, 1932

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NEIGHBORHOOD UNIT PLAN "B"

GROUND PLAN SHOWING SHOPS, COMMERCIAL
AND COMMUNITY BUILDINGS, VEHICULAR AND
PEDESTRIAN STREETS AND PARKS

LOWER EAST SIDE
NEW YORK CITY

LOWER EAST SIDE PLANNING ASSOCIATION
MAY 1, 1932

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SECTION TWO—SUMMARY

Specific Advantages Obtained in the Neighborhood Unit Development of the Area

The results of the investigation point to the following specific conclusions:

1. Development of the Lower East Side by large-scale operations, as large as 60 acres, including the area in streets, promises substantial economies as compared with construction by small-scale "piecemeal" projects. Important savings are realized in:

(a) Land utilization.

(b) Closing off superfluous streets, thus adding open space in blocks. Four out of seven "interior" streets of the Unit are thus treated.

(c) Construction and overhead.

(d) More efficient design of buildings.

(e) Building management.

(f) Obsolescence and depreciation.

(g) Conserving to the project the full income from rentals received from shops, garages, theatres in a community of from 15,200 to 26,000 people who will have greater purchasing power than the present population.

2. Financial solidity is given to the operation, particularly in respect to:

(a) A moderate rental.

(b) Investment value of a large, scientifically planned community controlled by able business management. Each building gains value from other buildings and from the community.

(c) Superior living conditions to those in most apartment developments. Superior attractiveness of community, and individual buildings with abundant light and air.

(d) Easy access to other parts of Manhattan by subway, bus, or on foot.

(e) Higher investment value and superior mortgage risk. Slow obsolescence.

3. Elimination of city nuisances:

(a) Security from motor traffic is provided in two ways: first, the by-passing of through traffic along the bounding streets; second, a system of pedestrian circulation extends through the whole neighborhood unit. Children reach the schools, the parks and playgrounds, and adults go to shops, garages, subway stations, and to other community buildings and recreation without crossing a motor

street. More than half the interior streets are closed to motors. Pedestrians cross over the remaining streets on a few small bridges. This facilitates the planning of shops on two levels on the shopping avenues. Large community garages, properly located, accommodate all cars.

(b) Lessening of disturbing noises, confusion in streets, dust, dirt, and other evils of congested living.

(c) No depressing monotony of paved streets and of towering brick walls; of narrow streets; constricted dark, ill-ventilated yards and courts, producing "shut-in" feeling; no buildings that look more like lofts than homes.

4. Suburban advantages:

(a) Buildings are of low coverage and are free-standing. They are grouped around large blocks, or "super-blocks", having interior gardens with abundant light and air on all four sides of each building. Courts, ill-ventilated yards are practically eliminated. No dark rooms. No blanketing effect of neighboring buildings on other buildings, taking away their light and air.

(b) Open spaces, parks, playgrounds, garden out-look, long vistas, planting along the pedestrian streets. Streets 100 feet wide.

(c) Separation of residence buildings from community buildings, and residence entrances separated from shops.

(d) Architectural interest and variety and homelike character of individual buildings that are completely detached from the mass and set off by planting.

5. Advantages to the City:

(a) Taxes and assessments are doubled or tripled, depending on heights of the new structures.

(b) Cost of street widening, including part of major and secondary thoroughfares, is borne by the neighborhood unit. City buys sites for schools, waterfront park, and playgrounds at acquisition cost to the unit.

(c) City is relieved of maintaining unnecessary street space.

(d) Load on city's rapid transit system is lightened. People reach their work largely on foot or in buses.

(e) Increase of population from present 15,200 up to 26,000 or more, depending on height of structures.

(f) The city has already made a huge outlay on the Lower East Side for improvements and for street widenings. It will cost but little more to complete the work so as to stimulate reconstruction and thus fully utilize the city's large investment in schools, streets, improvements, and facilities.

(g) By contributing open spaces in form of closed streets to park spaces in the super-blocks, the city avoids the obligation of purchasing blocks for small neighborhood parks.

6. Rentals are moderate:

(a) The average rental for the area would be between \$16.00 and \$18.00 a room a month, in order to make the operation profitable under the capital set-up adopted. If the city cooperated with the project by paying for cost of major and secondary thoroughfare widenings, by contributing the closed streets, by replacing the existing antiquated schools, the new structures were exempt from city taxes, and the land could be secured for \$9.00 per square foot, then the average rental could be reduced to well within the State Housing Board limit of \$12.50 per room a month, conservatively figured. Further investigation of the possibilities of large-scale operations might easily disclose additional economies.

(b) Rental estimates are based upon fixed charges averaging 7 per cent for the entire cost of the operation, with a 60 per cent mortgage carrying 5 per cent interest and 2 per cent amortization, and a 40 per cent equity returning 7 per cent. A change of 1 per cent in the fixed charges would affect the rentals about \$1.50 a room a month.

(c) The total assessed valuation of 1931 of land and improvement in the district is taken as the estimate of the value of the land. It is \$11.25 per square foot. A change in land value of \$1.00 per square foot would affect the rentals from \$0.25 to \$0.50 a room a month.

(d) Cost of construction, of operating, and taxes are based on prevailing figures, conservatively estimated.

7. High fireproof buildings have certain advantages over 6-story structures, as follows:

(a) In general, there is much to be said in favor of developing this area with high fireproof apartments rather than with 6-story structures. A much higher standard is possible, in which nearly all the benefits listed above appear to be realized to a much greater extent. A finer, more modern, and more permanent community would be created. Depending on the height of the buildings, the rentals might be either the same, or a little more or a little less, for the same size rooms than in the 6-story development. Calculations were made for buildings of an average height of 12 stories and of 18 stories.

(b) The land value of \$11.25 per square foot, which must be increased to \$12.00 by the demolition cost of the structures now on the land, is high for 6-story structures. The surest way of maintaining this existing land value is to erect high structures. Tall buildings, furthermore, would by reason of the greater population housed in them create additional values in both the residential sites and in the community and commercial sites of the neighborhood unit, as compared with lower structures. An additional advantage of fireproof buildings is their more permanent construction.

PART SIX
CONCLUSION—SUGGESTED PROCEDURE

CONCLUSION—SUGGESTED PROCEDURE

The Lower East Side of New York City is in the midst of a most extreme economic decline. More than 53 per cent of its former population has been lost, and present population is steadily diminishing. Property values have declined and rental values in both commercial and dwelling properties have been greatly reduced. Numerous buildings have been abandoned and others have been removed. Mortgage loans have been reduced to the equivalent of present land values and further mortgage loans are becoming more and more difficult to secure. Assessed values have been reduced to some extent but numerous properties have been sold or can be purchased at prices considerably below assessed value. All of these conditions have occurred despite new subway construction, numerous street widenings, a few isolated new structures encouraged by recent housing legislation, and a rather substantial amount of rehabilitation and restoration of old buildings encouraged by the energetic activities of the East Side Chamber of Commerce.

Further disintegration of the Lower East Side cannot be arrested by mere panaceas or palliatives. The roots of the problem are too firmly imbedded in the fundamental economic and social structure of the city to be simply or quickly dealt with. No permanent result can be accomplished by a single action; such as a new law, a change in financial policy, a great public improvement, by ordinary methods of real estate promotion or by regulatory planning measures, such as zoning. There must be comprehensive planning for the entire area based on sound economics and high social standards, and concerted effort by each and all of the numerous interests involved—property owners, public officials, financial institutions, building interests, architects and engineers. It is a task which challenges the best talents of each group which is in any way concerned with the building of the modern city, and is a test of whether these groups possess the ability to work together for the accomplishment of a satisfactory result. An arbitrary or selfish attitude uncompromisingly insisted upon by one group will diminish or destroy successful accomplishment.

Since a beginning of some sort had to be made, the Lower East Side Planning Association authorized the preparation of a main traffic thoroughfare plan and a transit plan as the assumed logical first step. These two plans have been prepared and are herewith submitted with the hope that they will furnish the basis for such necessary successive steps as are needed to accomplish reconstruction. What are these next steps? Broadly speaking they are five in number, as follows:

1. Official adoption of the thoroughfare and transit plans.
2. Housing market survey (i.e., determination of the types of housing which could most logically be built in the Lower East Side).
3. Research and plans, to determine the social standards and economic advantages possible for neighborhood units of varying size and character.
4. Parks and zoning.
5. Formation of housing corporations to build one or more neighborhood units.

Experience has proved the wisdom of comprehensive city planning. Single structures upon individual lots are incapable of influencing or withstanding the environmental conditions of the neighborhood in which they stand. Thus only by comprehensive planning of a city and by comprehensive detailed planning of a community sufficient in size to establish its own environment can the individual structure be assured of that degree of permanence and stability its owners may rightfully expect.

Every community should have reasonably convenient means of access and egress in the form of main traffic thoroughfares and mass transportation facilities. It is not necessary that there be a multiplicity of streets. A few relatively wide, properly designed, and well located main thoroughfares will accommodate all important vehicular and mass transportation facilities. While it is impossible to forecast accurately all future needs, it is believed that the main traffic thoroughfare plan presented herewith will form a sound basis for the ultimate reconstruction of the Lower East Side. In order that this or some similar plan may be ac-

cepted and followed, it is necessary that there be some form of official recognition and adoption.

1. *Official Adoption of the Street and Transit Plans:*

The laws of New York State anticipate and provide for the manner in which comprehensive plans for an entire city or for major portions thereof may be officially adopted. New York City has an official map. The present main traffic thoroughfare plan should be established upon the official map. This will give the required degree of assurance to those who ultimately come to participate in the reconstruction of the Lower East Side that they may safely base any detailed plans of neighborhood construction upon a pattern of the district which has official recognition and sanction.

The present transit plan or some similar comprehensive plan should be adopted by resolution of the Board of Estimate, as a master plan, so that those participating in the reconstruction of the Lower East Side may predicate their investments upon an officially recognized plan of transit facilities with the assurance that certain existing facilities may reasonably be expected to continue and that additional service may sooner or later be expected as shown upon the officially adopted master plan. Without assurances of this kind, subject, of course, to alterations which may become necessary because of any future changes in conditions, it cannot be expected that any reconstruction will take place.

The adoption of the main traffic thoroughfare and transit plans as here proposed need not commit the city to large expenditures, nor to any definite policies of distribution of costs as between private property and public agencies. These are matters for subsequent determination and are so contemplated by the legislation which authorizes adoption of official plans. It should be stated, however, that the present plans have been drawn with the utmost care, with careful recognition of existing conditions, and with careful consideration of all factors of cost. No new subways are contemplated other than those already constructed or anticipated. Practically no new street car construction is contemplated and further, the plan anticipates maximum utilization of buses for replacement of existing street car lines and for ultimate new routes. While considerable new street widening is proposed, its cost, even though undertaken by the uneconomic methods of the past, would be no greater than the amount that has already been expended in this area with far less satisfactory influence upon the improvement of the district

than may be expected from a comprehensive plan as here proposed. The street widening which is contemplated can be accomplished gradually, however, and with far greater economy than may be supposed. The establishment of the future street lines upon the official map would greatly reduce the ultimate expense for condemnation by causing individual structures to set back until such time as large-scale reconstruction would take place, at which time costs might be reduced still farther by mutual agreement upon amount and distribution of cost between the city and abutting property owner. It is hoped that this plan will stimulate consideration of new ways and means of dealing with the problems of readjustment.

The official adoption of the main traffic thoroughfare and transit plans constitutes one of the most important steps in the chain of integrated actions essential to the reconstruction of the Lower East Side and is the test of the extent to which public officials are willing to cooperate and assist in this most important work.

2. *Housing Market Survey*

There are many opinions as to the types and kinds of new housing which should be built upon the Lower East Side. While the area has always contained a large amount of low-cost housing, it is doubtful if there are sound reasons why the Lower East Side should necessarily be rebuilt with housing for the accommodation of those groups of people in the lowest income brackets. Despite the unfavorable economic conditions which so universally prevail today, there is less and less demand in the Lower East Side for the lowest priced housing. There is a growing vacancy in the buildings which now rent for from \$5.00 to \$10.00 per room per month.

The strongest present demand for housing on the Lower East Side is for quarters renting from \$11.00 to \$15.00 per room per month. There is no doubt but what there will continue to be a very great demand for housing within this rental range.

It has been contended that partly because of high land values and partly because of the particularly convenient location of the Lower East Side, new housing construction should cater to those groups of people whose incomes are in the higher brackets. Obviously there are definite limitations to the numbers of such groups that can be attracted.

Because of these uncertainties, it is apparent that a very careful survey of the markets for housing within definite rental ranges in Greater New York should be undertaken at an early date. While

it seems logical that the greatest markets would seem to be in the moderately low-priced types of housing for the accommodation of the large numbers of people engaged either in the municipal service or in offices in the down-town financial center or in offices and commercial pursuits in the mid-town business center, these are merely opinions which should be thoroughly analyzed and studied. Because of the magnitude of the area and of the large numbers of people that might be housed, it is especially important that a most careful survey should be undertaken as a basis for determining the types and kinds of dwellings that might be designed. The survey likewise should give consideration to the effect which large reconstruction might have upon real estate in other parts of the Greater City. Any program for the Lower East Side should be wholly constructive in nature and not merely undertaken as a new speculation regardless of its effect upon other parts of the city.

The Housing Market Survey will demonstrate the ability of economists, sociologists, and realtors to cooperate in determining what types of housing are needed and how and where such types may best fit into the whole structure of the city and particularly what types may best be built in the Lower East Side as part of a large reconstruction program.

3. *Research and Plans*

Preliminary investigation reveals that it is quite possible to provide low-cost housing facilities within areas bounded by main thoroughfares with standards of light and air and environmental conditions superior to those found in any part of Manhattan. Without much more extensive research than has yet been undertaken in this field, however, it is difficult to determine the extent of the economies which can be realized. There is no certainty as to the size of units, the more economical design, and the types and kinds of construction which would prove most economical under varying sets of conditions. These uncertainties can be removed only by extensive research. There has been very little research and study of the more intensive types of apartment construction, such as would seem to be appropriate on the Lower East Side. The Amalgamated Apartments on Grand Street, the Rosenwald Apartments in Chicago, and the Phipps Garden Apartments on Long Island, though considerably smaller than the general neighborhood unit type of construction here contemplated, are splendid examples of the high social standards and sound economies that can be

achieved by large-scale housing operations.

Once a survey of the housing markets in New York City has been completed and conclusions have been reached with respect to the types and kinds of houses which could be built most appropriately upon the Lower East Side, numerous researches, plans and studies should be made to ascertain the exact economies which can be effected and the nature of environmental conditions that can be created, so that from these studies decisions may be made with respect to financing and construction. It is believed that only by such studies, plans, and researches can the fundamental soundness of the proposal be demonstrated and the necessary mortgage and equity money be attracted.

Studies, researches, and plans of the character suggested are a test of the abilities and capacities of the technical groups—city planners, architects, and engineers—to cooperate successfully in the chain of integrated actions essential to the reconstruction of the Lower East Side.

4. *Parks and Zoning*

There are two further planning considerations involved in the reconstruction of the Lower East Side, i.e. Parks and Zoning. It has been suggested that a large park is needed in this area. The need for a parklike treatment of the riverfront is unquestionably desirable. Such a treatment is proposed in the plans for a neighborhood unit (See Plates 21 to 23) which accompany this report. No final recommendation is made as to its size. If the area shown upon these plans ultimately proves to be sufficient there need be no large public expenditure, since the cost of the present area has been absorbed in the site cost of the neighborhood unit and similar provision can be made in the other waterfront units.

The determination of park needs of the district, however, should be undertaken as part of the housing research. Since the large open spaces provided within block interiors will satisfy many recreational needs it is doubtful if there will be need for anything more than one large waterfront park the dimensions of which can be determined only after analysis of such needs as may be found to be unsatisfied by the open spaces of the neighborhood units.

There is need for zoning revision. This should probably assume two forms (1) for the district as a whole and (2) for neighborhood units.

The district is now too generously provided with unrestricted and business zones and too inadequately provided with residence zones. While

this subject of comprehensive zoning requires special and thorough investigation it now appears that in general the unrestricted zones should be very considerably modified if not completely eliminated and the business zone confined to the frontage along main thoroughfares or perhaps confined largely to the area bounded by Allen, Houston, Bowery and Canal Streets. This area is central to main traffic thoroughfares and the numerous rapid transit lines both present and proposed. It is already the center of the highest land values which are too great for consideration for housing purposes. A concentration within this area of the specialty shops and the wholesale and jobbing houses now found scattered throughout certain other parts of the area would be beneficial to values in this district and would make these other areas more desirable for residence use. There is very great justification for serious consideration of a most important business center in the area thus defined. Properly conceived and organized it should develop as one of the important business centers of Manhattan Island sufficiently different in character not to compete with important centers already established. Certain business establishments of the Lower East Side have long enjoyed a city-wide patronage. By greater centralization they should gain in strength and increase in number and importance.

Until there has been more thorough research in the size and design of neighborhood units it is difficult if not impossible to forecast the character of zoning regulation which could be best established. Present zoning legislation in this state has been wisely drawn to anticipate special zoning regulation for certain areas designed as large neighborhood units. It is particularly difficult to devise general zoning regulations for an entirely new type of large-scale property development, at least until such time as these neighborhood units have been thoroughly studied, designed and constructed. The fundamental social and economic necessity of the neighborhood unit will justify new zoning measures closely adjusted to the new designs.

5. *Formation of a Housing Corporation*

The formation of a housing corporation to undertake the construction of a large unit area would be the next important step. The type of housing corporation needed would be something of a new venture in the field of financing and building. It would eliminate the wasteful practices and substantially reduce the costs so prevalent in the separately compartmented activities which take place today in the long chain of operations be-

tween the acquisition of a building site and the ultimate rental or sale of dwelling quarters. Such a corporation should be formed upon a limited dividend basis. Its principal object would be the production of the most satisfactory types of dwellings possible at low cost. Stabilized investment of large sums of money at reasonable rates would supersede the highly speculative practices of the present.

It is assumed that housing by private enterprise can be undertaken successfully on the Lower East Side. This may eventually prove to be an erroneous assumption. Subsequent studies may show that the Lower East Side is the logical place for the lowest cost types of housing which can be constructed only by direct subsidies from the city or state, or by municipal housing undertaken in the same form as other public utilities, such as water supply, which are publicly constructed, owned and controlled. Until such has been found to be the case, however, it is assumed that reconstruction of the Lower East Side is possible by private initiative with private capital. This does not imply that it must be done by the exceedingly wasteful methods of the past. Probably no field of endeavor so vitally related to human welfare has been given such little scientific study as the housing of large numbers of our urban populations. It is no wonder that our citizens have tried to escape from the city because of the universally prevalent low standards of housing erected predominantly as a result of excessive speculation and with little scientific application of economic and social principles.

So thoroughly discredited are the past methods of improving land and constructing dwellings that some new means of dealing with the very necessary function of homes production is a most urgent need. By large-scale construction methods it has been demonstrated that there are great economies to be secured in construction costs. There should likewise be possible great economies by large-scale financing. In fact, there can be no large-scale construction without large-scale financing having due regard for the social needs of the community. The sources of mortgage funds can no longer be expected to regard the Lower East Side or other centrally located areas in large American cities as highly attractive or even safe places for the investment of their funds under present conditions. Where construction is on a sufficiently large scale to establish a permanently stable and sound environmental condition, the mortgage interests should be greatly interested. Sources of equity money likewise should be interested and could

probably be attracted in larger amounts and at much cheaper rates than is possible in the vast areas of greater instability and more highly speculative character which now are found throughout all our large cities. Here is a wide opportunity for financial statesmanship which will bring those concerned in the financing, designing and building of dwelling accommodations into unified and concerted action. Certainly costs can be lowered tremendously, and social standards improved to such an extent that it should be possible to provide living quarters for a large percentage of our urban populations without resort to municipal or state housing with its inevitable implications of more and more taxation.

The provision of satisfactory housing facilities in large cities has reached an economic impasse under present methods. Can all of those groups concerned in various phases of housing, and, in fact, this means modern society, cut through the present wasteful and unsound processes of promotion and financing housing for the largest population group? Can we create a new instrumentality wherein the acquisition of land, the design of the structure, construction, and financing become a single integrated process resulting in high standards at moderate cost?

This new type of housing corporation may be said to lie midway between the wasteful disorganized procedure of the past on the one hand and strictly municipal housing on the other. It will be faced with numerous difficulties, of which two of the most important will be (1) the ability to attract equity money in sufficient amounts at reasonable rates and (2) the ability to assemble completely large unit areas of land at fair value.

Whether equity money in sufficient amounts and at reasonable prices can be attracted, can only be determined by experience. Except in times of economic stress there has never been a lack of equity funds. Since prospects for future investments of all kinds are fraught with more and more difficulties it would seem that those in a position to furnish equity money would welcome an opportunity for stabilized investment in large-scale, well designed, neighborhood unit dwelling areas.

The problem of land assembly has always been difficult and troublesome to both public and private agencies. Where assembly cannot be accomplished by private initiative (and various cooper-

ative methods of so doing have been suggested), it is conceivable that new housing legislation might facilitate assembly by a private housing corporation where there were limited dividend features, especially if the standards of construction and methods of financing were subject to the approval of the State Housing Board. Railroads and numerous other public and semi-public utilities whose investments are no larger than would be the case in a neighborhood unit now enjoy the power of eminent domain.

Where construction is undertaken upon as large a scale as here proposed it seems inadvisable to take advantage of the present tax exemption privileges. If this is a valid assumption then present room rental restrictions (\$12.50 in New York City) should probably be adjusted accordingly. No rental restriction would seem advisable where there is a limited dividend corporation, official approval of plans, and no tax exemption claimed.

Housing corporations of the character here suggested should be of inestimable value in the rebuilding of American cities. They will serve a social purpose of incalculable worth for large numbers of people now incapable of securing good housing facilities. They will afford an outlet for mortgage money and equity money in large amounts with far greater safety and stability than is possible under present practices. They will create new housing in large amounts which will increase employment, add to taxable wealth and reduce special improvements and special taxes. They will offset enormous increases in taxation which must inevitably occur if our American cities are to be launched upon schemes for municipal housing which they are seldom satisfactorily organized to undertake, either from the standpoint of technical design, capable management or sound finance.

A housing plan such as suggested in this report can be brought within the jurisdiction of the State Housing Laws if tax exemption is claimed and certain minor modifications made, but before deciding hastily to so proceed there should be thorough consideration of various means and methods of providing funds for large scale moderate cost housing and of the true significance of tax exemption upon a large scale as a factor in municipal finance.

APPENDIX "A"
BIBLIOGRAPHY OF REPORTS
CONSULTED

BIBLIOGRAPHY

Various reports issued by municipal and private agencies have been referred to in preparing the plan for the Lower East Side. The major published reports are as follows:

I. Regional Plan of New York.

A. Survey Volumes:

- Volume I—Major Economic Factors in Metropolitan Growth and Arrangement.
- Volume II—Population, Land Values and Government.
- Volume III—Highway Traffic. Being Monograph Number One of Engineering Series.
- Volume IV—Transit and Transportation. Including Monograph Number Two of Engineering Series, Revised, and a Series of Supplementary Reports.
- Volume V—Public Recreation.
- Volume VI—Buildings: Their uses and the spaces about them.
- Volume VII—Neighborhood and Community Planning.
- Volume VIII—Physical Conditions and Public Services.

B. Plan Volumes:

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